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ABSTRACT

Patterns of courses completed by high school students versus courses completed by college and postsecondary vocational/technical students were examined. Data were from the High School and Beyond Study, including the 1982 high school transcripte and 1987 postsecondary transcripts for 1980 high school sophomores. Students who graduated from high school in the spring of 1982 and enrolled in postsecondary education by 1984 were included in the sample. Mathematics, science, computer science, humanities, and vocational courses were the focus of the study. Generally, the types of courses students took in high school corresponded to the types of courses they took in postsecondary education. More specifically, the results indicate that: (1) female students had less intensive high school mathematics preparation than did male students; (2) Black and Hispanic students completed high school mathematics and science courses at relatively low rates; (3) most students in 4-year institutions who completed a substantial number of science courses also had taken a substantial number of advanced science courses while in high school; (4) most postsecondary students took substantial amounts of advanced humanities in high school; (5) while some students who completed a substantial number of postsecondary courses had intensive vocational training in high school, most did not. Twenty-four tables and 19 graphs illustrate the study. Appendices include an overview of the study methodology, technical notes, and 46 tables. (TJH)

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Survey Report

December 1990

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Contractor Report

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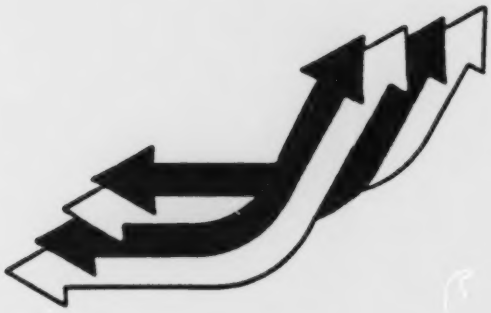

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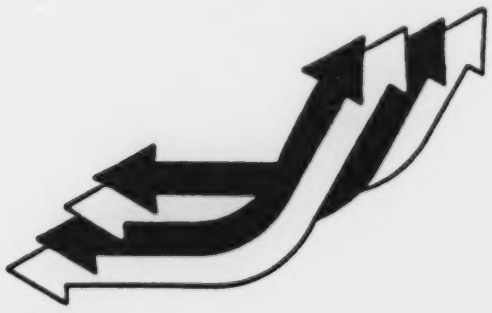
Phillip Kaufman
MPR Associates, Inc.



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December 1990

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HIGHLIGHTS

This report examines patterns of courses completed by high school students and patterns of courses completed by college and postsecondary vocational/technical students. The data analyzed were the High School and Beyond, including the 1982 high school and the 1987 postsecondary transcripts for 1980 high school sophomores. Because the main focus of the analysis was the relationship of high school and postsecondary courses, some 1982 high school graduates were excluded. Students who graduated from high school in the spring of 1982 and who enrolled in postsecondary education by 1984 were included in the analysis sample. The major findings of the report are as follows:

- Female students had less intensive high school mathematics preparation than did male students. However, both male and female students who completed a substantial number of postsecondary science courses (i.e., the majority or more than 40 percent of postsecondary courses were in science) generally had taken high levels of advanced high school math courses (e.g., advanced algebra, trigonometry, calculus).

- Blacks and Hispanics completed high school mathematics and science courses at relatively low rates. More than 50 percent of the Hispanics and 56 percent of the blacks completed less than two high school mathematics courses. The comparable rate for whites was 27 percent. In addition, more than 8 percent of Hispanic students completed less than one course in high school mathematics. Finally, approximately 17 percent of Hispanic and almost 10 percent of black students had not taken any high school science courses. The comparable rate for whites was 6 percent.

- Most students in 4-year institutions who completed a substantial number of postsecondary science courses (i.e., the majority or more than 40 percent of postsecondary courses were in science) also took substantial amounts of advanced science while in high school (e.g., advanced biology, advanced chemistry, physics), with few taking little or no advanced high school science.

- While students who completed a substantial number of postsecondary humanities courses took substantial amounts of advanced humanities in high school, so did most postsecondary students. In other words, students who completed a substantial number of postsecondary humanities courses were not distinguished from other postsecondary students by the large amounts of humanities courses they completed in high school.

- While some students who completed a substantial number of postsecondary vocational courses had intensive vocational training in high school, most did not. Most postsecondary students did not take an intensive program of high school vocational training, with overwhelming majorities of most 4-year college students taking little or no vocational training in high school.

FOREWORD

This report uses information about the postsecondary and secondary course-taking patterns of the 1980 sophomore cohort of the High School and Beyond Study. This report draws on information from High School and Beyond's base-year (1980), first followup (1982), second followup (1984), third followup (1986), as well as the sophomore Cohort Postsecondary Education Transcript Study (1987). This report examines the high school course-taking patterns of postsecondary students and describes the relationship between the courses these students took in high school and the courses they took in college.

The HS&B data are a rich source of information on the activities of high school graduates, on the consequences of alternative choices during young adulthood, and outcomes from these choices during early middle age. This report demonstrates the breadth of these data in the area of postsecondary education. Due to limitations of space, the analysis is restricted to a few important subgroups—sex and race. Many other subgroups deserve attention. Variation in course-taking patterns according to socioeconomic status, high school test scores, high school grade averages, home language, plans for postsecondary education, and family size, among others, can and should be examined in more detail.

We hope that this report will inspire other researchers to use these data to pursue their own interests. The National Center for Education Statistics (NCES) has computer tapes available to those wishing to carry out their own analysis of special questions and issues. NCES also maintains a large set of summary statistics on a microcomputer database. Statistics contained in the database cover the same topics described in this report but in much greater detail.

Information about obtaining HS&B computer tapes is available from the U.S. Department of Education, Office of Educational Research and Improvement, Information Technology Branch, 555 New Jersey Avenue, N.W., Room 215, Capitol Place Building, Washington, D.C. 20208-1227.

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I would also like to acknowledge the careful reading of this report by a panel of reviewers: Jerry West, Nabeel Alsalam, and Paula Knepper of the National Center for Education Statistics, David Bergeron of the U.S. Department of Education Office of Planning, Budget, and Evaluation, Meridith Ludwig of the American Association of State Colleges and Universities, and Oscar Porter of the National Institute of Independent Colleges and Universities.

Finally, I would also like to thank Carl M. Schmitt of the Longitudinal Studies Branch, who worked closely with me on this project.

Table of Contents

Highlights i

Foreword ii

Acknowledgments iii

List of Tables vi

List of Figures viii

Introduction 1

Chapter 1
High School Course Concentrations 3

High School Mathematics 3

High School Science 8

High School Computer Science 10

High School Humanities 13

High School Vocational Education 16

Summary 19

Chapter 2
Postsecondary Course Concentrations 20

Postsecondary Attendance Patterns 20

Number of Credits Taken 21

Postsecondary Course-Taking Patterns 26

Summary 46

Chapter 3
The Relationship Between Postsecondary Course-Taking Patterns and High School Course-Taking Patterns 47

High School Mathematics Pattern 47

High School Science Pattern 53

High School Humanities Pattern 58

High School Vocational Pattern 63

Summary 69

Table of Contents (cont.)

Chapter 4
Summary 70

APPENDIX A: Methodology and Technical Notes A-1

APPENDIX B: Supporting Tables B-1

List of Tables

Table 1.1.--Percentage of postsecondary students with specified high school mathematics patterns, by selected characteristics 7

Table 1.2.--Percentage of postsecondary students with specified high school science patterns, by selected characteristics 10

Table 1.3 --Percentage of postsecondary students with specified high school computer science patterns, by selected characteristics 12

Table 1.4.--Percentage of postsecondary students with specified high school humanities patterns, by selected characteristics 15

Table 1.5.--Percentage of postsecondary students with specified high school vocational patterns, by selected characteristics 18

Table 2.1.--Percentage of students attending 4-year and less-than-4-year institutions, by selected characteristics 21

Table 2.2.--Percentage of students concentrating in science-oriented courses in postsecondary education, by gender, race/ethnicity, and socioeconomic status 30

Table 2.3.--Average number of credits taken by students in postsecondary science coursework, by gender, race/ethnicity, and socioeconomic status 31

Table 2.4.--Percentage of students concentrating in science-oriented courses in postsecondary education, by high school program, grades, and ability quartile 33

Table 2.5.--Average number of credits taken by students in postsecondary science coursework, by high school program, grades, and ability quartile 35

Table 2.6.--Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by gender, race/ethnicity, and socioeconomic status 37

Table 2.7.--Average number of credits taken by students in non-science-oriented academic courses, by gender, race/ethnicity, and socioeconomic status 38

Table 2.8.--Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by high school program, grades, and ability quartile 39

Table 2.9.--Average number of credits taken by students in non-science-oriented academic courses, by high school program, grades, and ability quartile 41

Table 2.10.--Percentage of students concentrating in occupationally oriented subjects, by selected characteristics 43

Table 2.11.--Average number of credits taken by students in occupationally oriented subjects, by selected characteristics 45

Table 3.1.--Percentage of students attending 4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender.....51

Table 3.2.--Percentage of students attending less-than-4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender.....52

Table 3.3.--Percentage of students attending 4-year institutions with specified high school science pattern, by postsecondary education pattern and gender.....56

Table 3.4.--Percentage of students attending less-than-4-year institutions with specified high school science pattern, by postsecondary education pattern and gender.....57

Table 3.5.--Percentage of students attending 4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender.....61

Table 3.6.--Percentage of students attending less-than-4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender.....62

Table 3.7.--Percentage of students attending 4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender.....67

Table 3.8.--Percentage of students attending less-than-4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender.....68

List of Figures

Figure 1.1.--Percentage of postsecondary students with specified high school mathematics patterns, by gender, race/ethnicity, and socioeconomic status.....5

Figure 1.2.--Percentage of postsecondary students with specified high school science patterns, by gender, race/ethnicity, and socioeconomic status.....9

Figure 1.3.--Percentage of postsecondary students with specified high school computer science patterns, by gender, race/ethnicity, and socioeconomic status.....11

Figure 1.4.--Percentage of postsecondary students with specified high school humanities patterns, by gender, race/ethnicity, and socioeconomic status.....14

Figure 1.5.--Percentage of postsecondary students with specified high school vocational patterns, by gender, race/ethnicity, and socioeconomic status.....17

Figure 2.1.--Percentage of students spending various amounts of time in postsecondary education, by institution type of first enrollment 22

Figure 2.2.--Average number of postsecondary credits taken by those who first enroll in less-than-4-year institutions 4 years after high school graduation, by sex, race/ethnicity, and socioeconomic status 23

Figure 2.3.--Average number of postsecondary credits taken by those who first enroll in less-than-4-year institutions 4 years after high school graduation, by high school type, program, urbanicity, and ability levels.....24

Figure 2.4.--Average number of postsecondary credits taken in 4-year institutions 4 years after high school graduation, by sex, race/ethnicity, and socioeconomic status 25

Figure 2.5.--Average number of postsecondary credits taken in 4-year institutions 4 years after high school graduation, by high school type, program, urbanicity, and ability levels 26

Figure 2.6.--Percentage of students concentrating in various subject areas, by type of institution 28

Figure 3.1.--Percentage of students attending 4-year institutions with specified high school mathematics pattern, by postsecondary course pattern 48

Figure 3.2.--Percentage of students attending less-than-4-year institutions with specified high school mathematics pattern, by postsecondary course pattern 49

Figure 3.3.--Percentage of students attending 4-year institutions with specified high school science pattern, by postsecondary course pattern 54

Figure 3.4.--Percentage of students attending less-than-4-year institutions with specified high school science pattern, by postsecondary course pattern 55

Figure 3.5.--Percentage of students in 4-year institutions with specified high school humanities pattern, by postsecondary course pattern 59

Figure 3.6 --Percentage of students in less-than-4-year institutions with specified high school humanities pattern, by postsecondary course pattern 60

Figure 3.7.--Percentage of students attending 4-year institutions with specified high school vocational pattern, by postsecondary course pattern 64

Figure 3.8.--Percentage of students attending less-than-4-year institutions with specified high school vocational pattern, by postsecondary course pattern 65

INTRODUCTION

An ongoing concern among educators has been that the types of courses students fail to take during high school may limit their opportunities to participate fully in postsecondary education. In fact, some have argued that several specific courses or patterns of courses may act as critical filters for some undergraduate majors.[1] Educators have also found that students who do not participate in these filter courses in high school may lack the prerequisite knowledge and experience to be successful in some types of postsecondary subjects. Consequently, these students may be systematically sifted out of specific fields of study.

Furthermore, the level and intensity of students' experience in high school coursework appears to vary systematically according to their race, sex, socioeconomic status, curriculum program, and many other personal and school characteristics.[2] For example, students from lower socioeconomic backgrounds tend to take fewer advanced academic courses than students from higher socioeconomic backgrounds, and males tend to take more mathematics than females. Therefore, a disproportionate share of some groups may be excluded from pursuing postsecondary coursework, as well as those careers requiring high school mathematics and science.

The purpose of this report is to examine the secondary and postsecondary course-taking patterns and to describe the relationship between courses taken in high school and those taken in college. In so doing, the report not only describes the characteristics of students who took different types of courses in high school but also examines how the courses they took in high school were associated with the types of courses they took in postsecondary education.

Until recently, the analysis of the relationship between courses taken in postsecondary education and courses taken during high school has relied on self-reports from students for information on high school course enrollments. Typically, this self-reported data is too general and inaccurate to permit more than a cursory examination of the relationship between secondary and postsecondary curriculum choices. However, the analysis reported here uses data from the Postsecondary Education Transcript Study for 1980 sophomores who graduated from high school in 1982 and combines it with information from these students' high school transcripts. Thus, this report enhances earlier studies by relating data from postsecondary transcripts directly to data from secondary transcripts.[3]

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[1] Most of the work in this area has concentrated on the level of high school mathematics as a critical filter to postsecondary math and science enrollment and success; see L. Sells, "The Mathematics Filter and the Education of Women and Minorities," in L. W. Fox, L. Brody, & D. Tobin, eds., *Women and the Mathematical Mystique* (Baltimore, MD: Johns Hopkins University Press, 1980).

[2] See for example, J. West, et al., *An Analysis of Course-Taking Patterns in Secondary Schools as Related to Student Characteristics* (Washington DC: NCES, March 1985); also see E. Gareth Hoachlander and Susan P. Choy, *High School and Beyond: Classification of Secondary Vocational Education Courses and Students* (Berkeley: MPR Associates, November 1986, report for the Center for Education Statistics, LSB # 87-11-14).

[3] This report is based on two tabulations from the National Center for Education Statistics' Postsecondary Education Statistics Division: *High School Course-Taking Patterns of Postsecondary Academic Students* and *High School Course-Taking Patterns of Postsecondary Vocational Students.*

The Postsecondary Education Transcript Study was conducted in 1987 for the 1980 high school sophomores. This study collected transcripts from academic and vocational postsecondary institutions that respondents had reported attending since leaving high school. It is important for the reader to keep in mind that the Sophomore Cohort Postsecondary Education Transcript Study is, with one exception, restricted to those students who entered postsecondary institutions in the fall immediately following their high school graduation. Students were drawn into the sample if they began attending any postsecondary institution *full-time* by Fall 1982 and did not leave until after 1984. The exceptions were students who attended a proprietary institution, private technical or 2-year institution, or public technical institution. These vocational students were drawn into the sample regardless of when they started and whether or not they attended full-time.

This report consists of four chapters. It begins with a description of the high school course-taking patterns of students who later went on to postsecondary education. (This chapter does not describe the high school experiences of all students, but only those who went on to some form of postsecondary education.) Following this description, the report looks at postsecondary students' experiences within the college curricula.

The third chapter relates the students' postsecondary experiences back to their course-taking experiences in high school. Conclusions drawn from this backward perspective may be different than conclusions drawn from forward analyses—or relating students high school experiences forward to their postsecondary experiences. For example, while all students who take college preparatory mathematics in high school may concentrate in mathematics in college, not all students who concentrate in college mathematics may have taken college preparatory mathematics in high school. The final chapter summarizes and discusses the results of these analyses.

CHAPTER 1
HIGH SCHOOL COURSE CONCENTRATIONS

In this chapter we examine the course-taking experiences of those students in the high school class of 1982 who upon graduation enrolled in some form of postsecondary education.[4] Five high school subject areas are examined: mathematics, science, humanities, computer science, and vocational education. Using data from the students' high school transcripts, each student's experiences with these subject areas were classified into several course-taking patterns. These patterns reflect students' intensity of participation in the high school curricula and summarize the types of courses that students took during their high school careers. Only courses in which students earned a passing grade were included in this analysis, and these courses are all reported in Carnegie Units.[5] Each subject area section begins with a brief description of how each course-taking pattern was defined.

High School Mathematics

Based on their high school transcripts, students were classified into one of four categories: 1) mathematics concentrators, 2) moderate concentrators, 3) general mathematics students, and 4) limited/non-participants. Students were classified as secondary mathematics concentrators if they earned four or more credits in mathematics, with these credits earned in at least one advanced course such as analytic geometry, pure mathematics, solid geometry, analysis, calculus, mathematics 3, or statistics and probability. Students were classified as moderate concentrators if they earned four or more credits in mathematics, with these credits earned in at least one of the following courses: algebra 1, 2, or 3; geometry; plane or solid geometry; trigonometry; or mathematics 1 or 2. Students were defined as general mathematics students if they earned one or more credits in mathematics, with less than two credits in college preparatory courses. Students were classified as limited/non-participants if they earned less than one credit in mathematics.[6]

Figure 1.1 displays students' high school mathematics patterns according to their gender, race/ethnicity, and socioeconomic status. Males took more college preparatory mathematics than females.[7] Twenty percent of males could be classified as high school math concentrators, while only 15 percent of females were classified in this category.[8]

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[4]For the sake of simplicity, the combined high school course-taking patterns of all students going into postsecondary education are examined in this chapter regardless of what type of institution they attended. In later chapters, however, students attending 2- and 4-year institutions are examined separately. Furthermore, throughout this report we examine only those courses (both high school and postsecondary institutions) in which students earned passing grades. Therefore, while we refer to students' course-taking patterns, to be precise we are examining only credit-earning patterns. Empirically there is essentially no difference between the course-taking patterns and the credit-earning patterns in high school or postsecondary education.

[5]A Carnegie Unit is approximately equivalent to a single course that meets five times a week for one class period throughout the school year.

[6]The taxonomy of courses used in creating the high school course-taking patterns is provided in the technical appendix.

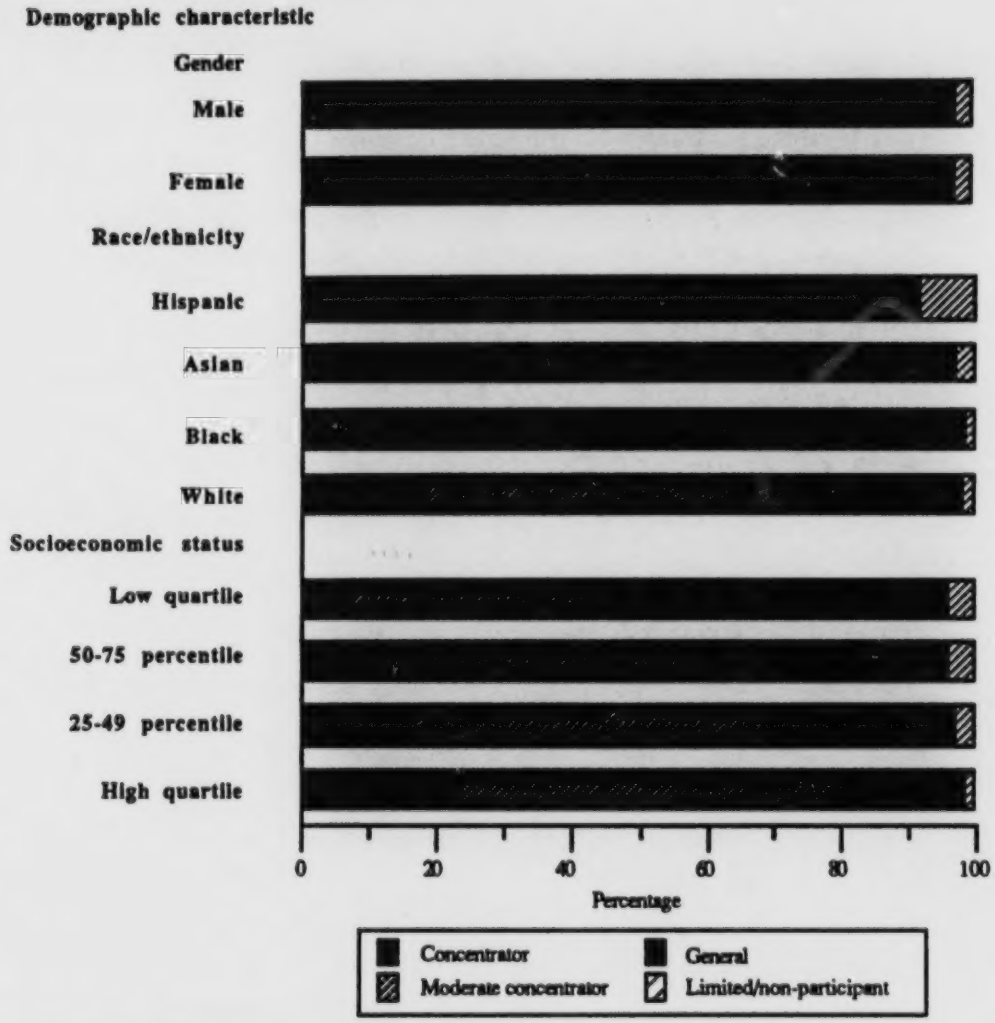
[7]Differences among groups reported throughout this report were evaluated using a two-tailed t-test. Unless otherwise noted, differences reported were significant to the $p \leq .05$ level for each family of tests. An explanation of the procedure used, as well as standard errors for all tables and figures, is given in the technical appendix to this report.

[8]Because only the high school course-taking patterns of students who went to postsecondary education are examined here, these percentages may be slightly different than those reported elsewhere. See for example,

However, while males were more likely to take more advanced mathematics courses, males and females were equally likely to take at least one course in high school mathematics. An almost identical percentage of males and females earned less than one credit in high school mathematics—2 percent and 3 percent, respectively.

J. West, et al., *An Analysis of Course-Taking Patterns in Secondary Schools as Related to Student Characteristics* (Washington DC: NCES, March 1985).

Figure 1.1.--Percentage of postsecondary students with specified high school mathematics patterns, by gender, race/ethnicity, and socioeconomic status



SOURCE: High School and Beyond 1986

White students took more college preparatory mathematics courses than either black or Hispanic students, and Asian students took more mathematics than white students. Almost 30 percent of Asian students and 19 percent of white students were classified as high school mathematics concentrators, while only 11 percent of Hispanic and 6 percent of black students were high school mathematics concentrators. A relatively large proportion

of Hispanic students took little or no mathematics in high school—8 percent of Hispanics (compared with 3 percent of Asians, 2 percent of whites, and 2 percent of blacks) earned less than one credit in high school mathematics.

In addition, socioeconomic status (SES) and high school mathematics course-taking patterns were related. Students from high SES families took more college preparatory mathematics than students from lower SES families. Almost one-quarter (23 percent) of high SES students were classified as high school mathematics concentrators compared with only 7 percent of low SES students. Only 1 percent of students from high SES families earned less than one credit in high school mathematics.

Table 1.1 displays high school mathematics course-taking patterns for students with different self-reported high school programs, average high school grades, academic abilities, and postsecondary educational plans (as high school seniors).[9] Students' high school programs were related to their course-taking patterns in mathematics. More than 80 percent of high school academic students were classified as either moderate concentrators or concentrators, with almost one-fourth of academic students (23 percent) classified as high school mathematics concentrators. Only 2 percent of vocational students and only 6 percent of general students were classified as mathematics concentrators.

The higher the students' ability levels and grades in high school the more likely they were to have taken college preparatory mathematics.[10] Forty-three percent of "A" students were mathematics concentrators in high school, while 75 percent of "C-D" students were general math students. Thirty-one percent of students in the highest ability quartile were classified as high school mathematics concentrators, while less than 8 percent in the second lowest ability group were classified in this category. Virtually all of the students in the highest ability group took at least one course in math during high school, while less than 1 percent earned no credits in mathematics (Table 1.1).

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[9]The estimate of a student's high school program based on self-reported data may be different than the estimate of the student's high school program based on transcript data.

[10]The ability index is a measure based on the average of the student's standardized scores on the reading, vocabulary, and math tests taken when the student was a sophomore in high school.

Table 1.1.--Percentage of postsecondary students with specified high school mathematics patterns, by selected characteristics

	High school mathematics pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total	17	51	29	3
High school program				
General	6	46	44	4
Academic	23	58	18	1
Vocational	2	28	64	6
High school grades				
A	43	50	6	1
A-B	30	59	11	1
B	17	58	23	2
B-C	9	49	39	3
C	3	35	55	6
C-D	1	15	75	9
D	†	†	†	†
Ability (test quartile)				
Low quartile	0	16	76	8
25-49 percentile	3	42	51	4
50-75 percentile	8	60	29	3
High quartile	31	56	13	1
Postsecondary plans in 1982				
No postsecondary	1	22	70	8
Vocational/technical training	3	34	58	5
Some college (less than 4 years)	7	45	43	5
Bachelor's degree	19	58	21	2
Advanced degree	27	55	17	1

† Not calculated due to low sample size

SOURCE: High School and Beyond 1986

Students' postsecondary plans as seniors in high school were associated with the amount of college preparatory mathematics they took in high school.[11] Less than 1 percent of students with no postsecondary plans took advanced mathematics courses, and only 3 percent of students planning to receive postsecondary vocational or technical training were classified as mathematics concentrators. Most high school students who did not plan to go

[11]The order of cause and effect here is not clear. Students who take little advanced mathematics in high school may choose not to pursue a college degree, or students who do not plan to pursue a college degree may not enroll in advanced mathematics courses in high school.

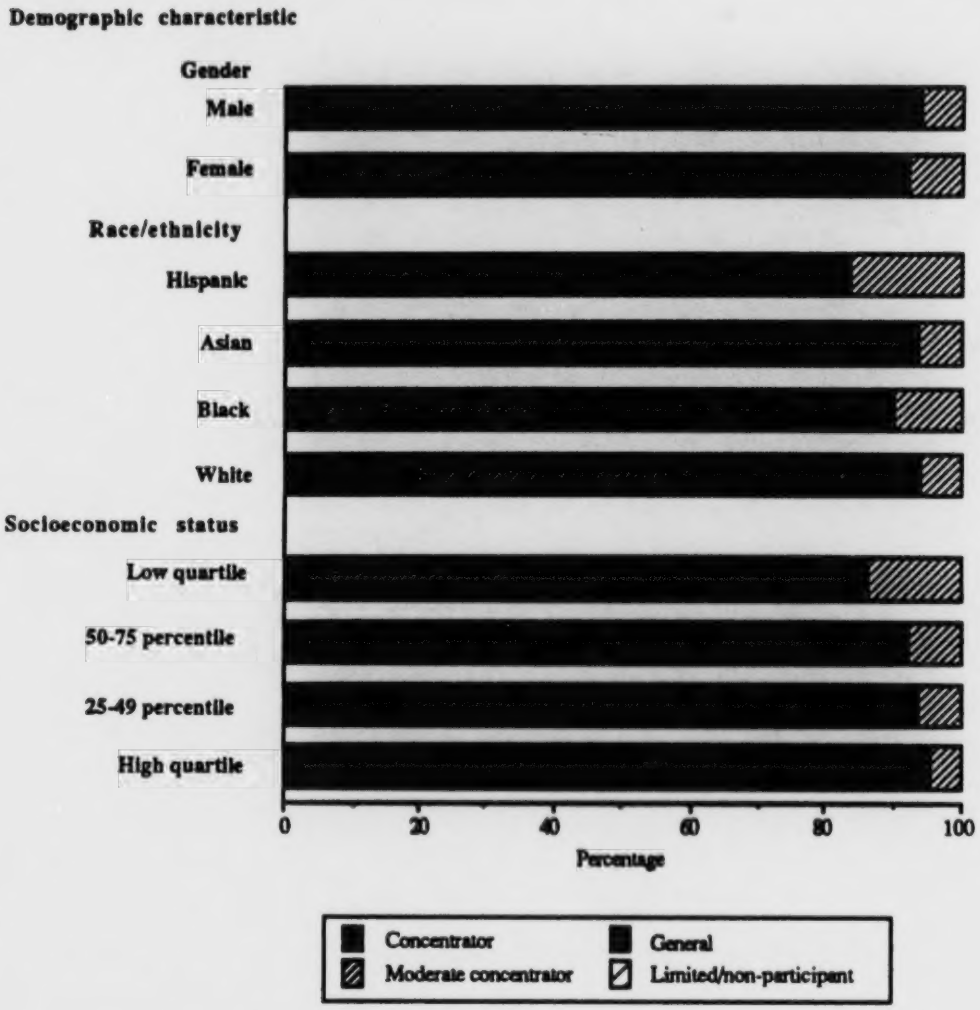
on to college but nevertheless did enroll in some form of postsecondary education had little preparation in college level mathematics. About 70 percent were general mathematics students.

High School Science

Based on their participation in high school science coursework, students were classified into one of four categories: 1) concentrators, 2) moderate concentrators, 3) general science students, and 4) limited/non-participants. Students were classified as secondary science concentrators if they earned one or more credits in each of the following courses: biology, chemistry, and physics, in addition to any credits earned in general science. Students were classified as moderate concentrators if they earned one or more credits in advanced physical science or advanced life science, in addition to any credits in general life or physical science. Students were classified as general science students if they earned one or more credits in general life or general physical science and less than one credit in advanced science courses. Students were defined as limited/non-participants if they earned less than one credit in science.

Figure 1.2 shows the high school science course-taking patterns for students according to gender, race/ethnicity, and socioeconomic status. The general patterns are very similar to those shown above in mathematics. However, differences between most groups are somewhat more pronounced. For example, males, on average, took more advanced science courses than females, Asians and whites took more advanced science courses than blacks and Hispanics, and students from high SES backgrounds took more advanced science courses than students from low SES backgrounds.

Figure 1.2.--Percentage of postsecondary students with specified high school science patterns, by gender, race/ethnicity, and socioeconomic status



SOURCE: High School and Beyond 1986

Table 1.2 shows the high school science patterns for students with different self-reported curriculum programs, high school grades, ability quartiles, and postsecondary education plans. The patterns are similar to those for high school mathematics. Students in the academic program took more advanced science than students in the general or vocational program; "A" students earned more advanced science credits than "C-D" students; a larger proportion of students scoring in the highest ability quartile took advanced science than students of lesser ability; and students who as seniors planned to attain a bachelor's or higher degree earned more credits in advanced science than those whose postsecondary aspirations were somewhat lower.

Table 1.2.--Percentage of postsecondary students with specified high school science patterns, by selected characteristics

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total	17	39	37	7
High school program				
General	6	29	53	13
Academic	24	46	27	3
Vocational	1	17	64	17
High school grades				
A	40	42	14	4
A-B	28	49	22	2
B	20	41	33	6
B-C	10	36	46	9
C	4	27	56	12
C-D	1	14	65	20
D	†	†	†	†
Ability (test quartile)				
Low quartile	1	13	66	20
25-49 percentile	3	28	55	14
50-75 percentile	9	42	43	7
High quartile	31	46	20	2
Postsecondary plans in 1982				
No postsecondary	1	13	73	14
Vocational/technical training	1	24	59	17
Some college (less than 4 years)	7	33	49	11
Bachelor's degree	20	45	31	5
Advanced degree	29	43	24	3

† Not calculated due to low sample size

SOURCE: High School and Beyond 1986

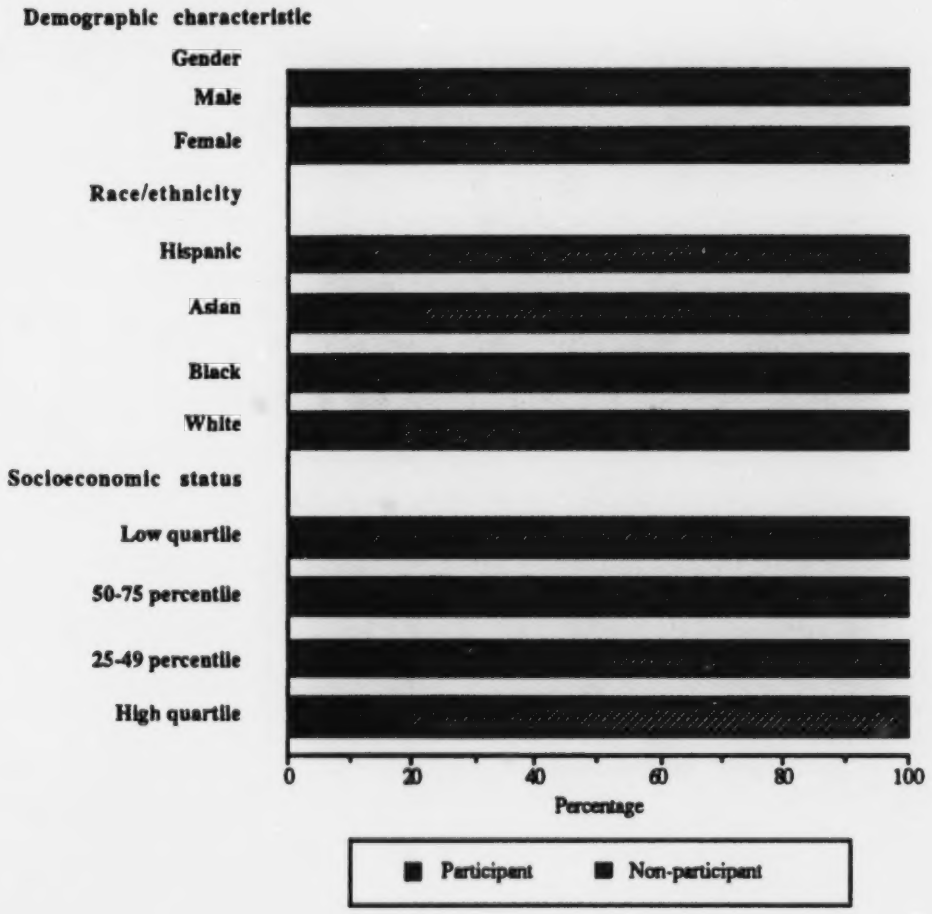
High School Computer Science

In 1982, at the time of this survey, few high schools offered computer courses, and consequently only a small percentage of students earned any credits in computer science. Therefore, to describe the course-taking in computer science, students were classified into only two groups: students who earned any credits were classified as participants, while students who did not earn any credits in computer science were classified as non-participants. Despite the limited amount of coursework in computer science that students took, the content of these courses varied greatly, ranging from rather simple computer literacy courses to complex programming and computer architecture courses. Furthermore, many of these courses were vocationally oriented.

Figure 1.3 shows the computer science course-taking patterns for students according to gender, race/ethnicity, and socioeconomic status. As in math and science, males were

more likely than females to have taken some computer coursework in high school (21 percent to 15 percent, respectively).[12]

Figure 1.3.--Percentage of postsecondary students with specified high school computer science patterns, by gender, race/ethnicity, and socioeconomic status



SOURCE: High School and Beyond 1986

There were small differences in the proportion of students from high and low SES backgrounds who earned computer science credits. Approximately 20 percent of high SES

[12]While Figure 1.3 appears to show differences in the proportion of students in each racial/ethnic category who earned some credits in computer science, these differences are not statistically significant.

students earned credits in computer science compared with approximately 13 percent of low SES students.[13]

Table 1.3.--Percentage of postsecondary students with specified high school computer science patterns, by selected characteristics

	High school computer science pattern	
	Participant	Non-participant
Total	18	82
High school program		
General	14	86
Academic	20	80
Vocational	12	88
High school grades		
A	30	70
A-B	21	79
B	18	82
B-C	16	84
C	9	91
C-D	13	87
D	†	†
Ability (test quartile)		
Low quartile	9	91
25-49 percentile	13	87
50-75 percentile	15	85
High quartile	23	78
Postsecondary plans in 1982		
No postsecondary	9	91
Vocational/technical training	11	89
Some college (less than 4 years)	12	88
Bachelor's degree	23	77
Advanced degree	18	82

† Not calculated due to low sample size

SOURCE: High School and Beyond 1986

As in math and science, students who reported that they were in the academic program, who earned good grades, who scored well on academic ability tests, and who aspired to earn a college degree were more likely to have had some exposure to computers in high school than their peers (Table 1.3). However, working with computers in high school was not the exclusive privilege of college preparatory students. Almost 9 percent of low ability students, 14 percent of general students, and 9 percent of students not planning to attend college had some computer science coursework while in high school.

[13]The difference between low and medium SES students and the difference between high and medium SES students was not statistically significant.

High School Humanities

Based on their coursework in high school humanities, students were classified into three categories: 1) concentrators, 2) moderate concentrators, and 3) limited concentrators.[14] Students were classified as secondary humanities concentrators if, while in high school, they earned two or more credits above and beyond the first four credits in English, the first two credits in foreign language, and the first three credits in social studies. In other words, humanities concentrators had taken approximately two or more credits above the recommendations of the National Commission on Excellence in Education for high school graduation requirements in the humanities—better known as the New Basics.[15] Students were classified as moderate concentrators if they exceeded the requirements of the New Basics in the humanities by one but less than two courses.[16] Students were classified as limited concentrators if they earned less than or equal to the recommended number of courses in the humanities.

Figure 1.4 displays humanities course-taking patterns for students according to gender, race/ethnicity, and socioeconomic status. In contrast to the pattern seen earlier with math, science, and computer courses, female high school students took more humanities courses than males. However, this difference was small—35 percent of males were high school humanities concentrators compared with 40 percent of females.

As in mathematics and science, whites and Asians earned more credits in humanities than blacks or Hispanics (Figure 4). However, these differences again seem quite small compared with the differences in science and mathematics course-taking patterns. While twice as many white students and more than three times as many Asian students concentrated in high school science as Hispanics or black students, only about 20 percent more white students and about 30 percent more Asian students were classified as high school humanities concentrators compared with black and Hispanic students.

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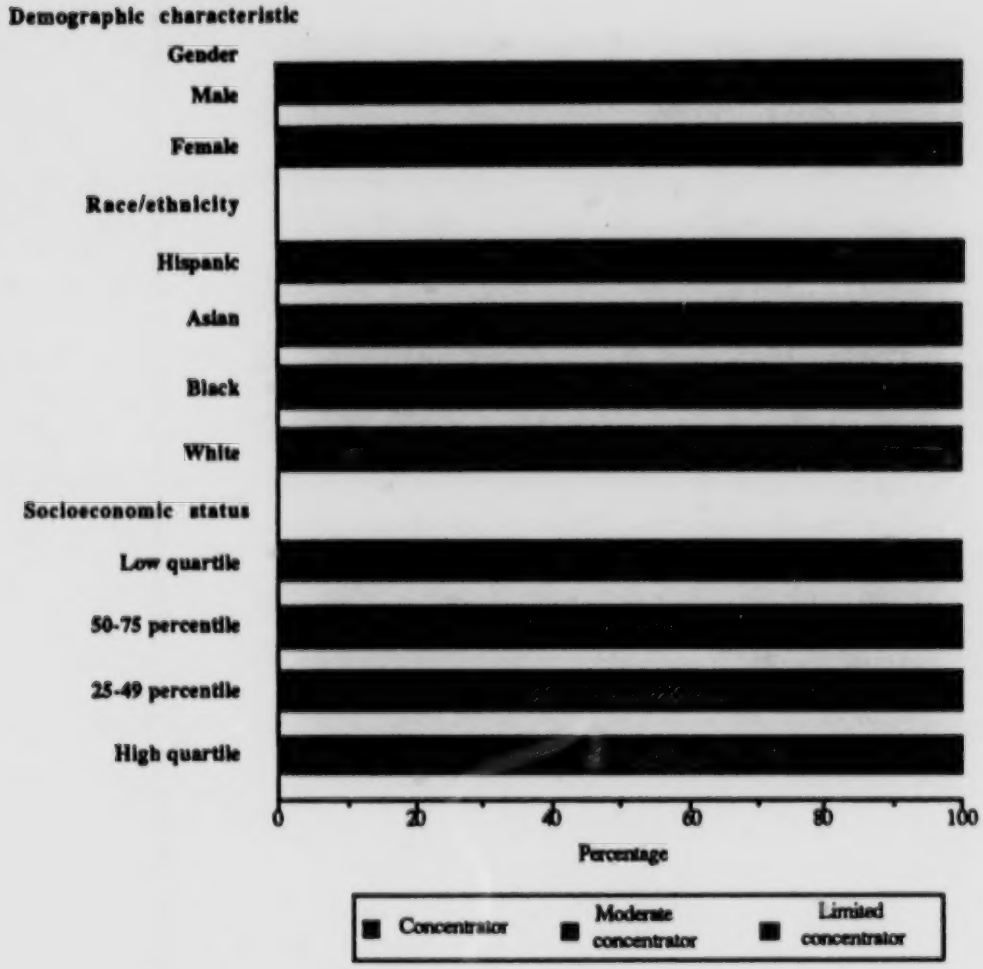
[14]There were only three categories for the humanities course-taking pattern (rather than four as in mathematics and science). Students either took above or below basic requirements in the humanities.

[15]Courses defined here as humanities are part of the New Basics. The New Basics correspond to four years of English, three years of mathematics, three years of science, three years of social studies, and one-half year of computer science. The Commission also recommended the study of a foreign language in high school. See National Commission on Excellence in Education, *A Nation At Risk: The Imperative for Educational Reform* (Washington DC: Government Printing Office, 1983).

[16]The New Basics are expressed in Carnegie Units. A Carnegie Unit, or one course credit, is a one-year full-time course.

Figure 1.4.--Percentage of postsecondary students with specified high school humanities patterns, by gender, race/ethnicity, and socioeconomic status



SOURCE: High School and Beyond 1986

The socioeconomic status of students was related to their high school humanities coursework. More than twice as many students from high SES backgrounds than from low SES backgrounds were classified as humanities concentrators (46 percent to 23 percent). Again the relationship between students' SES and their humanities course-taking patterns was not as dramatic as the relationship between students' SES and their math or science course-taking patterns. More than three times as many high SES students were science or math concentrators than were low SES students (23 percent to 7 percent in mathematics and 24 percent to 7 percent in science).

Table 1.4.--Percentage of postsecondary students with specified high school humanities patterns, by selected characteristics

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Total	38	30	32
High school program			
General	30	33	37
Academic	44	29	27
Vocational	18	33	49
High school grades			
A	45	25	31
A-B	43	31	26
B	39	32	29
B-C	37	29	33
C	28	33	40
C-D	19	29	53
D	†	†	†
Ability (test quartile)			
Low quartile	22	27	51
25-49 percentile	26	32	42
50-75 percentile	35	33	32
High quartile	47	29	24
Postsecondary plans in 1982			
No postsecondary	20	35	46
Vocational/technical training	26	31	44
Some college (less than 4 years)	33	28	39
Bachelor's degree	38	33	30
Advanced degree	47	29	25

† Not calculated due to low sample size

SOURCE: High School and Beyond 1986

Table 1.4 shows the humanities course-taking patterns for students from different high school curriculum programs, their academic ability levels, and their postsecondary educational plans as high school seniors. Groups of students who took more courses in high school math and science were similar to those who took more high school humanities courses. More students who were in the academic program, who earned good grades, who displayed high levels of academic ability, and who had plans to pursue a college degree earned more credits in advanced humanities coursework than their peers. However, the differences among students in their course-taking patterns in the humanities were smaller than the differences among students in math and science. Larger proportions of students in lower ability and achievement groups were classified as humanities concentrators than were classified as math, science, or computer concentrators.

High School Vocational Education

Based on their pattern of participation in the vocational curriculum, students were classified into four categories: 1) vocational concentrators, 2) limited concentrators, 3) samplers, and 4) non-participants. Students were classified as vocational concentrators if they earned four or more credits in each of one or more vocational education programs (e.g., business, marketing, etc.). Students were classified as limited concentrators if they earned four or more credits in vocational education but less than four credits in any single vocational program. Students were defined as samplers if they earned a fraction of a credit but less than four vocational education course credits. Students were defined as non-participants if they earned no credits in vocational education.

Almost all students participated to some degree in vocational education. More than 93 percent earned at least some credits in vocational coursework. However, females were more likely than males to have taken a concentrated program of vocational coursework—18 percent of females and 13 percent of males were vocational concentrators (Figure 1.5). Black students were more likely to concentrate their studies in vocational education than white or Asian students.[17] Almost one in four black students (24 percent) earned four or more credits in a single vocational education program or earned four or more credits in more than one vocational program. Only about 7 percent of Asian students and 15 percent of white students were vocational concentrators.[18]

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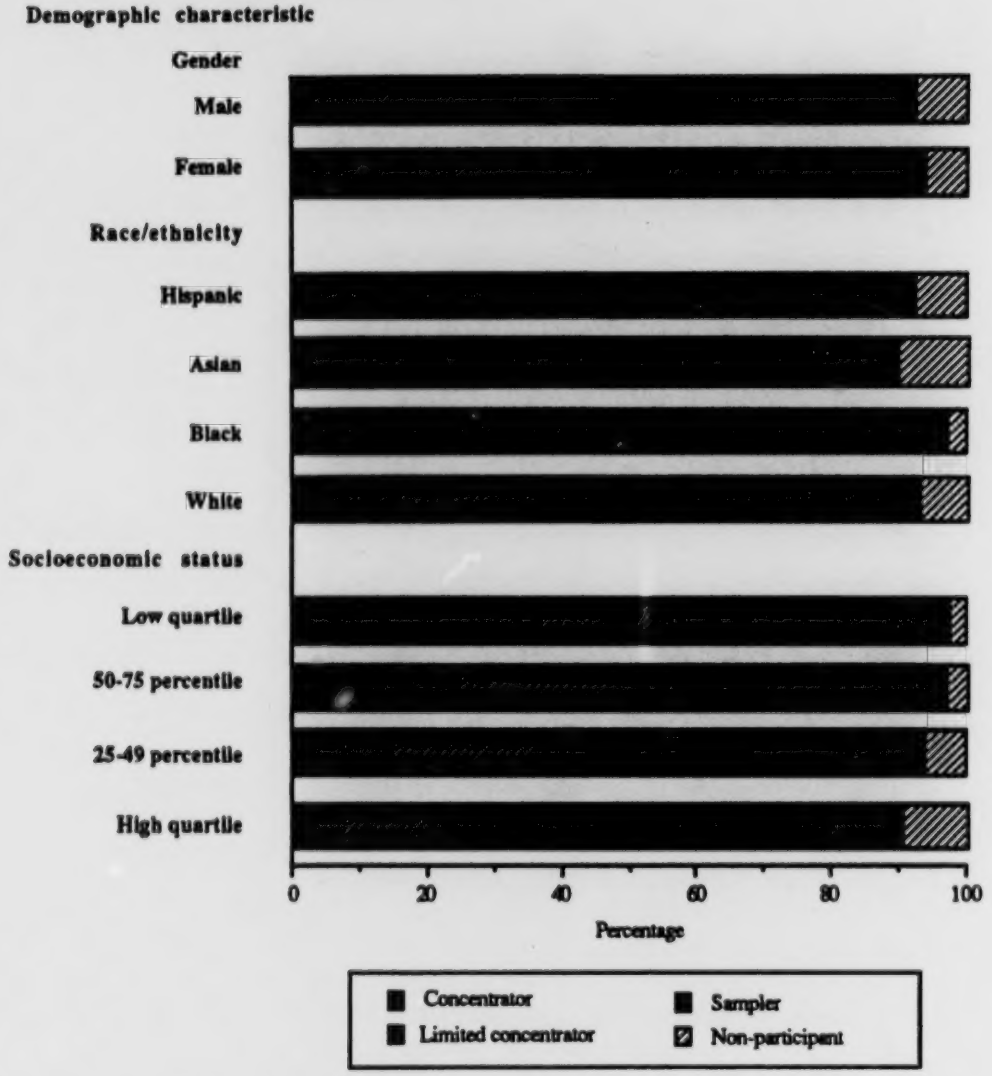
[17]Frequently there is an interaction between race and sex in terms of educational and occupational attainment. However, these interaction effects were not examined here.

[18]Hispanic students were also more likely to be vocational concentrators than were Asian students. However, the difference in the proportion of white and Hispanic students who were vocational concentrators was not statistically significant.

Figure 1.5.--Percentage of postsecondary students with specified high school vocational patterns, by gender, race/ethnicity, and socioeconomic status



SOURCE: High School and Beyond 1986

Fewer high SES students than low SES students earned credits in a concentrated program of vocational education. Only 7 percent of high SES students were vocational concentrators, and only about 14 percent were limited vocational concentrators. Almost 37 percent of low SES students were vocational concentrators, while another 25 percent were limited concentrators.

Almost one-half of all students in the vocational program were classified as vocational concentrators, and 31 percent were classified as limited concentrators (Table 1.5). While

most academic students took some vocational education, their vocational course-taking patterns could best be characterized by the "sampler" category. Almost 69 percent of all academic students were classified as vocational samplers, while only 14 percent of academic students were classified as limited concentrators and 9 percent classified as concentrators. Sixteen percent of general students were concentrators, and 34 percent were limited concentrators.

The students' abilities and their postsecondary educational plans were also associated with their vocational course-taking behavior. Students in the lower ability quartiles, those with lower grades, and those with lower postsecondary educational aspirations earned more credits in concentrated vocational programs than did other students. Furthermore, while almost 90 percent of high ability students earned some vocational credits, most earned less than four credits in vocational coursework.

Table 1.5.--Percentage of postsecondary students with specified high school vocational patterns, by selected characteristics

	High school vocational pattern			
	Concentrator	Limited Concentrator	Sampler	Non-participant
Total	16	20	58	6
High school program				
General	16	34	49	2
Academic	9	14	69	9
Vocational	50	31	17	2
High school grades				
A	14	11	64	11
A-B	11	14	67	8
B	15	17	62	6
B-C	18	28	49	5
C	23	23	49	5
C-D	26	24	45	6
D	†	†	†	†
Ability (test quartile)				
Low quartile	43	30	26	1
25-49 percentile	25	30	43	3
50-75 percentile	17	22	58	3
High quartile	7	13	69	11
Postsecondary plans in 1982				
No postsecondary	39	25	32	4
Vocational/technical training	33	34	32	2
Some college (less than 4 years)	27	26	45	2
Bachelor's degree	11	19	65	5
Advanced degree	8	12	68	12

† Not calculated due to low sample size

SOURCE: High School and Beyond 1986

Summary

The course-taking patterns of high school students who later entered postsecondary education followed a rather simple pattern. White and Asian students, students from higher SES families, students with higher postsecondary aspirations, and students with higher academic abilities concentrated in academic subjects: mathematics, science, and the humanities. On the other hand, black and Hispanic students, students from lower SES backgrounds, students with no plans for higher education, and students with lower academic aptitudes concentrated in vocational programs. Furthermore, males tended to concentrate in math and science, while females were more likely to have concentrated in the humanities.

However, there were exceptions to this general pattern. Almost 7 percent of students from low SES families earned enough credits in advanced high school math and science to be classified as concentrators in these subjects. Almost 7 percent of high SES students earned enough credits in a concentrated program of vocational education to be considered vocational concentrators.

This chapter also showed that black and Hispanic students who went on to college had a lower level of postsecondary academic preparation than did their white counterparts. Although all of the high school students examined had enrolled in postsecondary education soon after graduation from high school, more than 50 percent of Hispanics and almost 58 percent of blacks in this group of students had earned less than two credits in high school mathematics. In addition, more than 8 percent of Hispanic postsecondary students from this cohort, both 2-year and 4-year, had not earned any credits in mathematics. Finally, approximately 16 percent of Hispanics and almost 10 percent of black students had earned less than one credit in high school science.

CHAPTER 2
POSTSECONDARY COURSE CONCENTRATIONS

In this chapter we examine the postsecondary course-taking patterns of students from the high school class of 1982 who upon graduation enrolled in some form of postsecondary education. This chapter consists of three sections. First, we describe the characteristics of students attending 4-year and less-than-4-year institutions. Next, we briefly describe the number of credits taken by these students in their first four years after graduation from high school. In the third section we examine the characteristics of students who concentrated their studies in each of four subject areas: two academically oriented areas (science-oriented courses and non-science-oriented courses), and two occupationally oriented areas (technical occupationally oriented courses and non-technical occupationally oriented courses).

Postsecondary Attendance Patterns

The majority of students from the sophomore class of 1980 who went on to some form of postsecondary education attended 4-year rather than less-than-4-year institutions (Table 2.1). Sixty-four percent of all students entering college shortly after graduation from high school entered 4-year institutions. A majority of Hispanic students entered less-than-4-year institutions rather than 4-year institutions. In comparison, almost 80 percent of all Asian students attended 4-year institutions. Students of lower ability, those from the high school vocational program, and those who had "C" or less than "C" high school grade point averages also were more likely than other students to enter less-than-4-year institutions.

Table 2.1.--Percentage of students attending 4-year and less-than-4-year institutions, by selected characteristics

	Institution type	
	Less-than-4-year	4-year
Total	36	64
Gender		
Male	33	67
Female	38	62
Race/ethnicity		
Hispanic	56	44
Asian	21	79
Black	43	57
White	34	66
Socioeconomic status		
Low	56	44
25-49	48	52
50-75	38	62
High	21	79
High school program		
General	50	50
Academic	25	75
Vocational	69	31
High school grades		
A	11	89
A-B	21	79
B	31	69
B-C	45	55
C	59	41
C-D	74	26
Ability quartile		
Low	71	29
25-49	60	40
50-75	40	60
High	18	82

SOURCE: High School and Beyond 1986

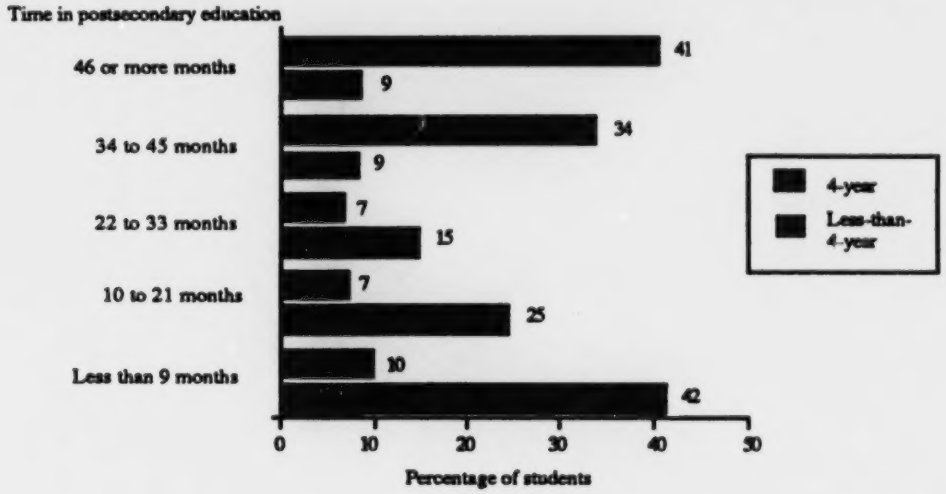
Number of Credits Taken

During the four and one-half years between the time these students graduated from high school in 1982 and the time the data were collected for this study, members of the high school class of 1982 had a wide variety of experiences in postsecondary education.

Between 1982 and 1987, about 7 percent had earned an associate's degree and almost one-third of these students had earned enough credits to receive a bachelor's degree.[17]

About one-half had not earned any type of degree or certificate. Many of these students had spent little time in postsecondary education and had taken only one or two credits. Students in less-than-4-year institutions spent the least amount of time in postsecondary education. During the four and one-half years after high school, 42 percent spent less than nine months taking college level courses (Figure 2.1). In contrast, 41 percent of students attending 4-year institutions spent 46 months or more in postsecondary education.

Figure 2.1.--Percentage of students spending various amounts of time in postsecondary education, by institution type of first enrollment



SOURCE: High School and Beyond 1986

Not only did students in 4-year institutions stay in school longer than students in less-than-4-year institutions, but they also took more credits. Figure 2.2 shows that, on average, students from the high school class of 1982 who had enrolled in less-than-4-year institutions had taken about 61 credits in postsecondary education by the Fall of 1987. Figure 2.4 shows that students enrolled in 4-year institutions had taken, on average, 112 credits in postsecondary education. This is equivalent to about seven semesters of coursework.[18] White and Asian students had taken, on average, more credits than black or Hispanic students in both 4-year and less-than-4-year institutions. Asians in 4-year institutions had taken a remarkably large number of credits, earning, on average, more than 143 credits (over nine full semesters of coursework). High SES students also attempted a remarkably large number of credits, earning almost 121 credits (or about eight full semesters of coursework).

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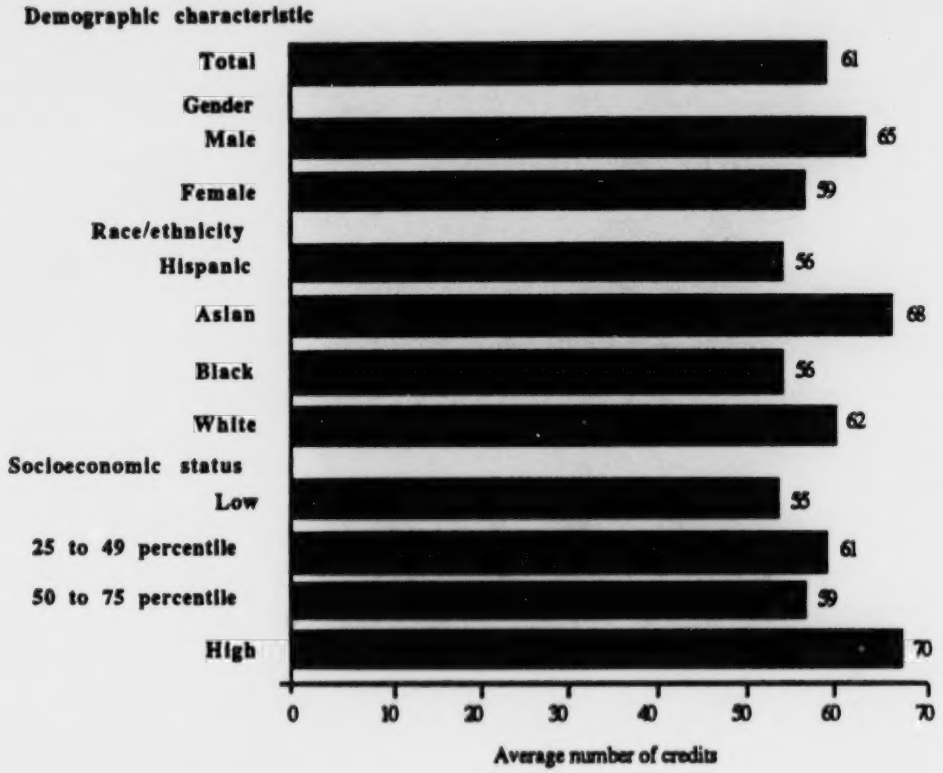
[17]All postsecondary credits are counted in this report, regardless of whether they led directly to any type of degree. Many students take credits in remedial classes, which do not count for degree credit.

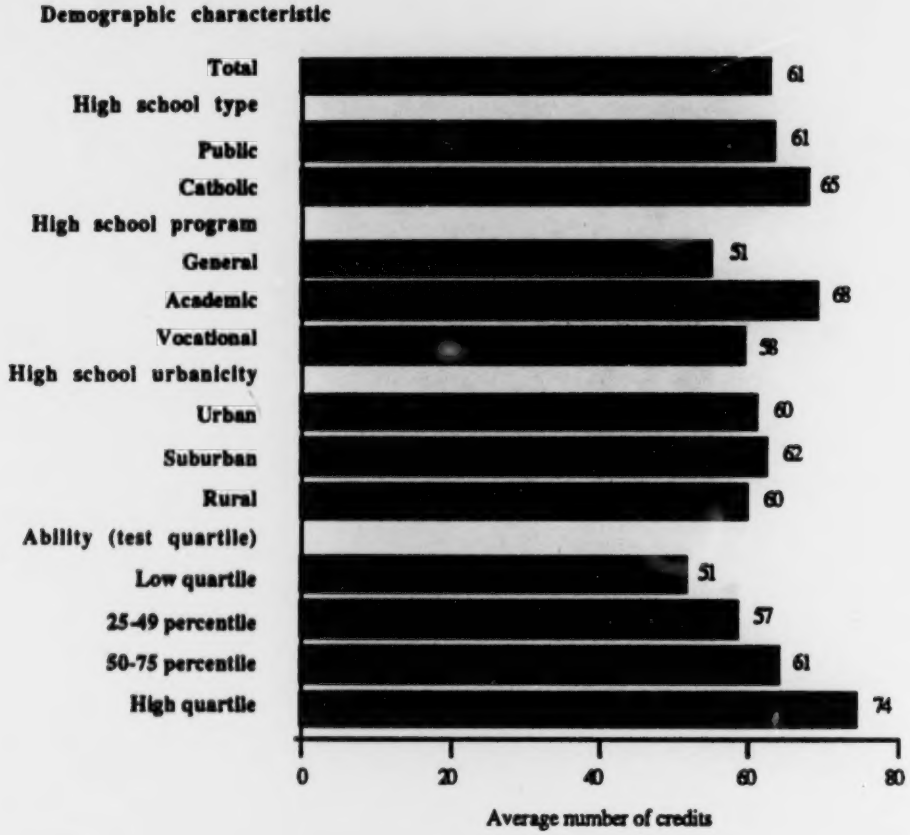
[18]This assumes a student takes a full load of 15 semester units.

Figure 2.2.--Average number of postsecondary credits taken by those who first enroll in less-than-4-year institutions 4 years after high school graduation, by sex, race/ethnicity, and socioeconomic status



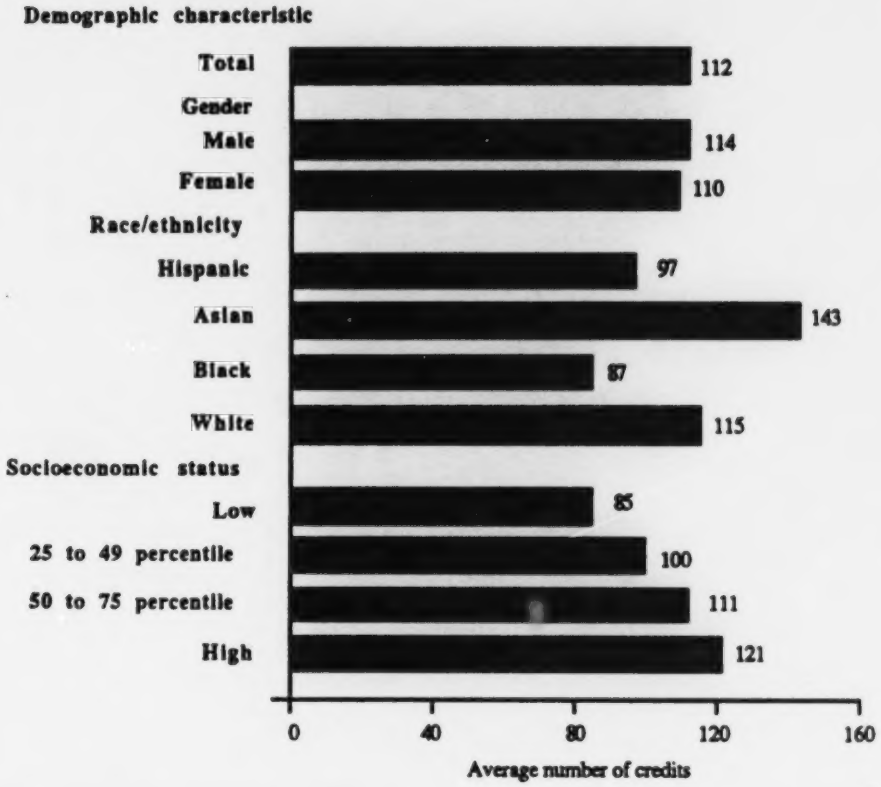
SOURCE: High School and Beyond 1986

Figure 2.3.--Average number of postsecondary credits taken by those who first enroll in less-than-4-year institutions 4 years after high school graduation, by high school type, program, urbanicity, and ability levels



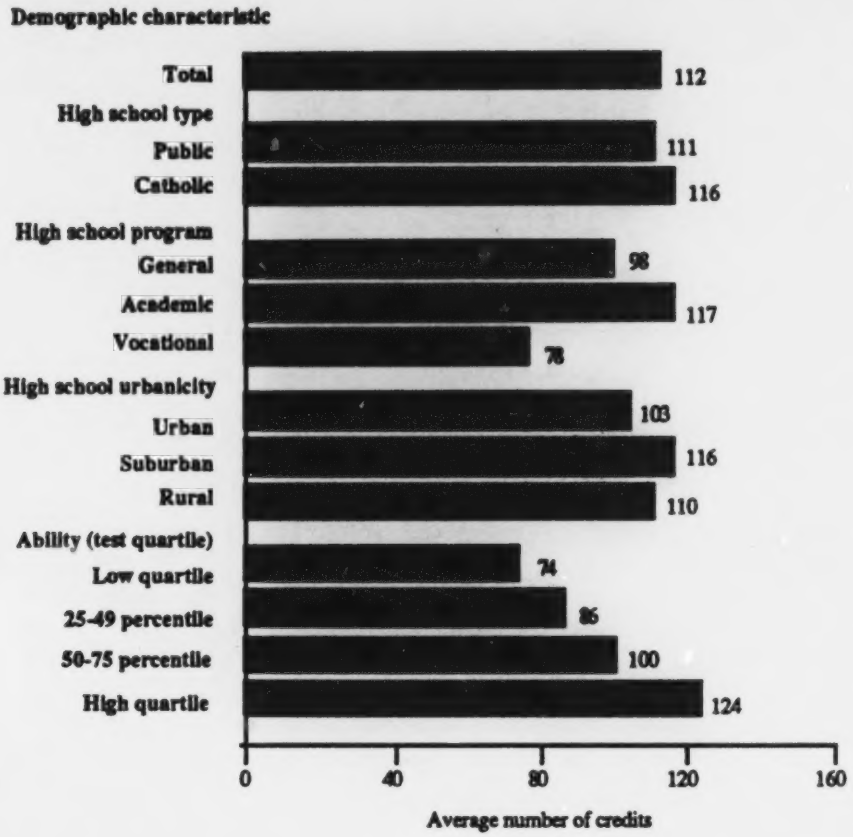
SOURCE: High School and Beyond 1986

Figure 2.4.--Average number of postsecondary credits taken in 4-year institutions 4 years after high school graduation, by sex, race/ethnicity, and socioeconomic status



SOURCE: High School and Beyond 1986

Figure 2.5.--Average number of postsecondary credits taken in 4-year institutions 4 years after high school graduation, by high school type, program, urbanicity, and ability levels



SOURCE: High School and Beyond 1986

Postsecondary Course-Taking Patterns

Not only did students vary in the amount of credits they had taken in their first four years of postsecondary education, but they also varied in the type of courses they had taken. This section examines this variety by describing the pattern of courses taken by members of the high school class of 1982. In looking at this pattern of postsecondary course-taking, students' coursework was organized around two academic and two occupationally oriented subject areas. These are briefly outlined below:[19]

- Science courses: (e.g., mathematics, engineering, health sciences, and natural sciences)

[19]The taxonomy used to classify courses into these categories is provided in the technical appendix presented at the end of this report.

- Non-science academic courses: (e.g., business, education, fine arts, humanities, and social sciences)

- Non-technical occupationally oriented courses: (e.g., vocational home economics, parks and recreation, and protective services)

- Technical occupationally oriented courses: (e.g., agricultural sciences, communications technologies, and science technologies)

The occupationally oriented subject areas were, by definition, only offered in less-than-4-year institutions.

Students' postsecondary concentrations were defined in two ways: 1) as the subject areas in which students had attempted the most credits or 2) as the subject areas in which students had attempted at least 40 percent of their credits.[20] That is, if students had taken most of their credits in natural science or had taken at least 40 percent of their credits in natural science, they were considered to be natural science concentrators. However, these postsecondary "concentrations" should be interpreted as "majors" in only a very limited manner. Although many persons classified as concentrators in a specific academic or occupational field could, in fact, have majored in that subject, this was not necessarily the case in all instances. For example, some of the students who were natural science concentrators were enrolled in basic and remedial mathematics courses and not in courses leading to a degree in mathematics or science. In other words, they just happened to have taken most of their postsecondary credits in mathematics and were not math majors.

Figure 2.4 describes the percentage of students in 4-year and less-than-4-year institutions who concentrated in each of the subject areas.[21] The largest proportion of students in both 4-year and less-than-4-year institutions concentrated their studies in non-science-oriented courses. More than 60 percent of all students in 4-year institutions and about 45 percent of students in less-than-4-year institutions concentrated in non-science-oriented subjects. About 15 percent of students in less-than-4-year institutions had taken most of their postsecondary credits in non-technical occupational subjects, and about 7 percent had taken most of their credits in technical occupational subjects.

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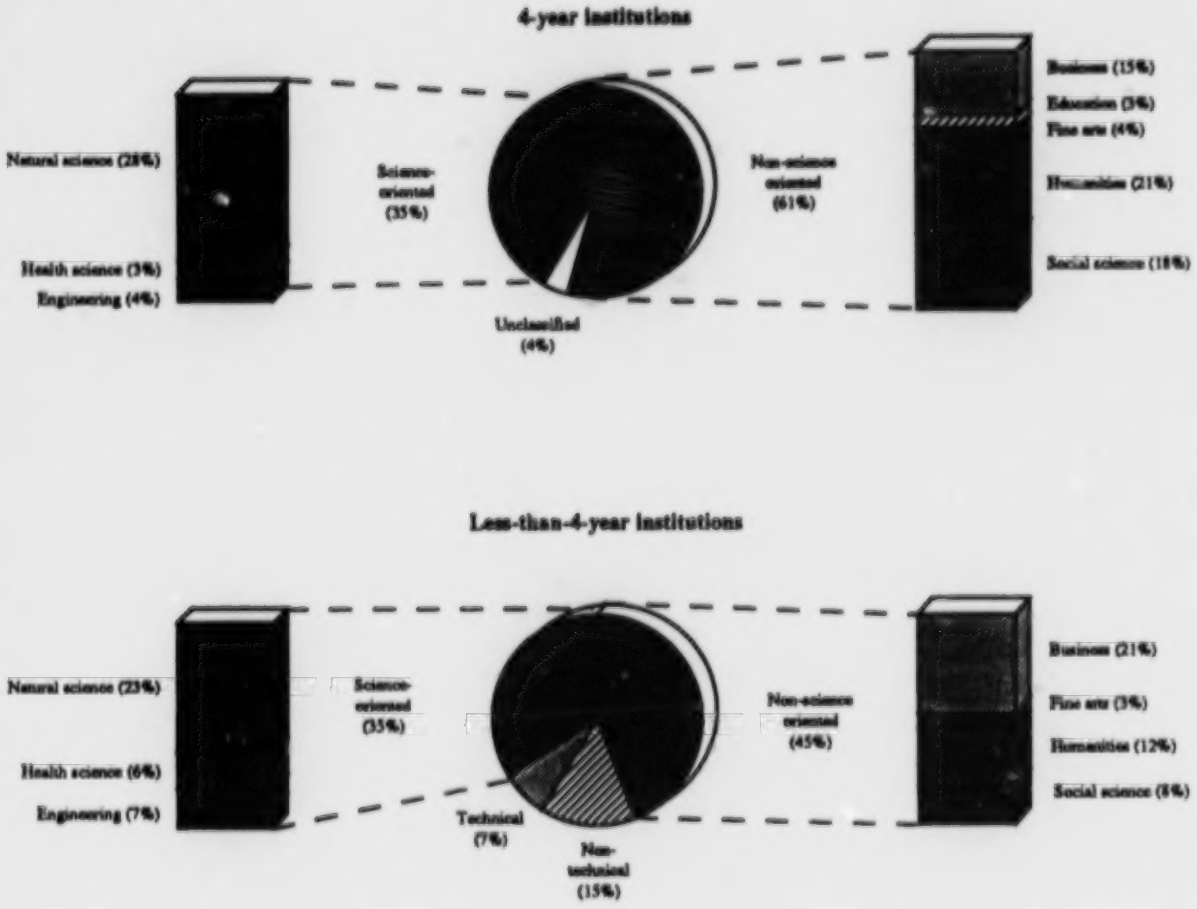
[20]Therefore, students could be classified as concentrators in two ways: 1) by taking 40 percent of their coursework in a particular subject, or 2) by having that subject be the area in which they took the most credits. Again, all postsecondary credits are counted in this report, regardless of whether they led directly to any type of degree.

[21]Courses with similar titles in 2- and 4-year institutions may actually have different course content. Furthermore, in some cases, courses leading only to a 2-year degree are taught in 4-year institutions.

Figure 2.6.--Percentage of students concentrating in various subject areas, by type of institution



SOURCE: High School and Beyond 1986

Science-Oriented Concentrations

A larger proportion of males than females in 4-year and less-than-4-year institutions concentrated their postsecondary studies in science-oriented courses (Table 2.2). Male students were much more likely to concentrate in engineering coursework in both 4-year and less-than-4-year institutions than were females. Sixteen percent of males in less-than-4-year institutions focused their studies in engineering compared with only 1 percent of females. Males in 4-year institutions were also more likely to concentrate in natural science compared with females. Asian students were more likely to concentrate their studies in the natural sciences than were other students. Sixty percent of all Asian students attending 4-year institutions concentrated their studies in the natural sciences.

Table 2.2.--Percentage of students concentrating in science-oriented courses in postsecondary education, by gender, race/ethnicity, and socioeconomic status

	Engineering	Health science	Natural science
		4-year	
Total	4	3	28
Gender			
Male	7	1	33
Female	1	5	24
Race/ethnicity			
Hispanic	3	3	24
Asian	8	1	60
Black	2	1	34
White	4	3	27
Socioeconomic status			
Low	3	1	26
25-49	4	3	33
50-75	4	4	31
High	4	3	26
		Less-than-4-year	
Total	7	6	23
Gender			
Male	16	1	24
Female	1	9	22
Race/ethnicity			
Hispanic	3	2	21
Asian	4	0	44
Black	7	4	31
White	8	7	21
Socioeconomic status			
Low	5	4	21
25-49	9	8	19
50-75	8	6	20
High	7	5	32

SOURCE: High School and Beyond 1986

Table 2.3 shows the average number of credits taken in each of the subject areas within science. The pattern for the number of credits taken mirrors the pattern of course concentration shown in Table 2.2. Males, on average, had taken more credits than females in engineering and natural science, while females had taken more credits in health science. Asian students had taken almost twice as many credits in science as did black, Hispanic, or

white students. Asians in 4-year institutions, on average, had taken 56 credits in the natural sciences and 16 credits in engineering.

Table 2.3.--Average number of credits taken by students in postsecondary science coursework, by gender, race/ethnicity, and socioeconomic status

	Engineering	Health science	Natural science
		4-year	
Total	5	3	30
Gender			
Male	8	1	34
Female	1	4	27
Race/ethnicity			
Hispanic	4	2	25
Asian	16	2	56
Black	3	2	26
White	5	3	30
Socioeconomic status			
Low	3	2	24
25-49	5	2	30
50-75	5	3	32
High	5	3	31
		Less-than-4-year	
Total	4	3	13
Gender			
Male	8	1	15
Female	1	4	11
Race/ethnicity			
Hispanic	2	1	12
Asian	4	1	20
Black	3	1	12
White	4	3	13
Socioeconomic status			
Low	3	3	11
25-49	4	3	12
50-75	4	2	12
High	4	3	16

SOURCE: High School and Beyond 1986

Students from the high school academic program were more likely to concentrate in the natural sciences than were students from the general or vocational programs (Table 2.4). This was true in both 4-year and less-than-4-year institutions. Almost 30 percent of high school academic students in both 4-year and less-than-4 year institutions had taken most of their coursework in the natural sciences. Students with good high school grades and high ability levels were also more likely to concentrate in the natural sciences. Paradoxically, students in less-than-4-year institutions with poor high school grades (less than "C") and students with high ability were more likely than other students to take engineering.

Table 2.4.--Percentage of students concentrating in science-oriented courses in postsecondary education, by high school program, grades, and ability quartile

	Engineering	Health science	Natural science
		4-year	
Total	4	3	28
High school program			
General	2	2	25
Academic	4	3	30
Vocational	4	3	20
High school grades			
A	8	4	37
A-B	6	4	30
B	3	3	29
B-C	1	2	25
C	1	1	20
C-D	0	1	13
Ability quartile			
Low	2	0	20
25-49	2	2	26
50-75	3	4	25
High	5	3	30
		Less-than-4-year	
Total	7	6	23
High school program			
General	6	6	18
Academic	8	7	27
Vocational	7	4	20
High school grades			
A	5	26	11
A-B	9	10	30
B	6	7	24
B-C	6	5	23
C	6	2	21
C-D	18	4	13
Ability quartile			
Low	4	5	17
25-49	8	5	19
50-75	5	5	25
High	11	9	26

SOURCE: High School and Beyond 1986

Students from the academic program in high school, those who had good grades in high school, or those who had demonstrated high ability levels also tended to earn more credits in postsecondary natural science (Table 2.5). This was true in both 4-year and less-than-4-year institutions. High school academic students in 4-year institutions had taken on average 32 credits in natural sciences; high school "A" students had taken 41 credits in natural science; while high ability students in 4-year institutions had taken on average 34 credits in the natural sciences.

Table 2.5.--Average number of credits taken by students in postsecondary science coursework, by high school program, grades, and ability quartile

	Engineering	Health science	Natural science
		4-year	
Total	5	3	30
High school program			
General	2	2	24
Academic	5	3	32
Vocational	4	2	18
High school grades			
A	10	3	41
A-B	7	4	36
B	4	3	29
B-C	2	2	24
C	1	1	18
C-D	1	1	17
Ability (test quartile)			
Low quartile	2	1	22
25-49 percentile	2	2	22
50-75 percentile	3	3	24
High quartile	6	3	34
		Less-than-4-year	
Total	4	3	13
High school program			
General	3	3	8
Academic	4	3	16
Vocational	4	2	11
High school grades			
A	6	12	19
A-B	5	5	20
B	4	3	13
B-C	3	2	12
C	3	1	10
C-D	7	1	6
Ability (test quartile)			
Low quartile	2	3	9
25-49 percentile	4	2	10
50-75 percentile	3	2	13
High quartile	6	4	18

SOURCE: High School and Beyond 1986

Non-Science-Oriented Concentrations

Similar percentages of male and female students in 4-year institutions concentrated in business coursework: about 15 percent of each group focused their studies in business (Table 2.6). However, many more female than male students concentrated in business in less-than-4-year institutions. Almost one-third of all female students attending less than 4-year institutions concentrated their studies in business.

Female students in 4-year institutions were also more likely to concentrate in the humanities than were male students—almost one-quarter of all female students in 4-year institutions concentrated in the humanities. Furthermore, Hispanic students in 4-year institutions were more likely to focus on the humanities than other students, with one-third of all 4-year Hispanic students choosing to concentrate in the humanities.

Table 2.6.--Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by gender, race/ethnicity, and socioeconomic status

	Business	Education	Fine arts	Humanities	Social science
		4-year institutions			
Total	15	3	4	21	18
Gender					
Male	15	0	4	17	18
Female	15	4	5	24	18
Race/ethnicity					
Hispanic	7	2	5	34	19
Asian	4	0	3	8	18
Black	12	1	4	22	14
White	16	3	4	21	19
Socioeconomic status					
Low	14	2	2	20	19
25-49	17	2	3	18	13
50-75	15	3	6	20	14
High	14	2	4	22	22
		Less-than-4-year institutions			
Total	21	0	3	12	8
Gender					
Male	8	0	4	11	8
Female	31	0	3	13	8
Race/ethnicity					
Hispanic	19	0	2	17	4
Asian	17	0	6	20	1
Black	26	1	1	14	2
White	21	0	4	11	9
Socioeconomic status					
Low	28	0	1	13	3
25-49	26	0	5	8	5
50-75	18	0	3	14	10
High	16	0	4	13	12

SOURCE: High School and Beyond 1986

Table 2.7 shows the average number of credits taken by students in 4-year and less-than-4-year institutions. The credit-earning patterns are similar to the course-taking patterns shown in the previous table. Students from high socioeconomic backgrounds tended to earn more credits in the social sciences and in the humanities. Males in less-than-4-year institutions, on average, had taken fewer business credits than females. However, Hispanic

Table 2.7.--Average number of credits taken by students in non-science-oriented academic courses, by gender, race/ethnicity, and socioeconomic status

	Business	Education	Fine arts	Humanities	Social science
		4-year institutions			
Total	12	3	7	26	26
Gender					
Male	13	1	6	24	26
Female	11	5	8	28	26
Race/ethnicity					
Hispanic	8	2	6	26	23
Asian	7	1	8	22	30
Black	10	2	5	21	19
White	13	3	8	27	26
Socioeconomic status					
Low quartile	10	2	4	19	21
25-49 percentile	13	3	5	22	21
50-75 percentile	11	4	8	25	23
High quartile	13	3	8	30	29
		Less-than-4-year institutions			
Total	10	0	3	10	7
Gender					
Male	6	0	3	9	7
Female	13	1	2	10	7
Race/ethnicity					
Hispanic	8	0	1	9	6
Asian	9	0	4	14	8
Black	12	1	1	9	6
White	10	0	3	10	8
Socioeconomic status					
Low quartile	11	1	1	8	5
25-49 percentile	13	0	2	9	6
50-75 percentile	9	0	3	10	8
High quartile	9	1	4	12	10

SOURCE: High School and Beyond 1986

Table 2.8.--Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by high school program, grades, and ability quartile

	Business	Education	Fine arts	Human-ities	Social science
		4-year institutions			
Total	15	3	4	21	18
High school program					
General	15	5	4	24	16
Academic	14	2	5	20	19
Vocational	20	1	2	21	16
High school grades					
A	19	2	5	17	7
A-B	15	3	3	21	16
B	14	3	5	21	20
B-C	17	3	4	19	22
C	8	1	5	30	24
C-D	5	0	8	20	39
Ability quartile					
Low	14	2	2	24	11
25-49	11	4	5	25	22
50-75	16	5	5	19	16
High	15	2	4	21	19
		Less-than-4-year institutions			
Total	21	0	3	12	8
High school program					
General	20	1	4	14	8
Academic	18	0	4	14	10
Vocational	28	0	2	8	3
High school grades					
A	22	0	0	16	9
A-B	21	1	9	9	8
B	21	0	3	15	9
B-C	21	0	3	12	6
C	24	0	3	12	9
C-D	11	0	0	6	5
Ability quartile					
Low	22	0	1	12	3
25-49	27	0	1	12	4
50-75	21	0	6	12	11
High	16	0	4	13	10

SOURCE: High School and Beyond 1986

4-year students (who were shown in the previous table to be more likely to be humanities concentrators), did not take appreciably more humanities courses than did whites or Asians. Part of this is attributable to the fact (shown in Figure 2.3 above) that Hispanics took fewer courses overall than did whites or Asians.

Students who had been in the vocational program during high school were more likely than other students to concentrate in business in college, regardless of whether they attended a 4-year or less-than-4-year institution (Table 2.8). About 20 percent of high school vocational students attending 4-year institutions and about 28 percent of vocational students attending less-than-4-year institutions concentrated in business.

Social science students in 4-year institutions were more likely to have had poorer grades in high school than students concentrating in other fields in 4-year institutions (Table 2.8). Of the students attending 4-year institutions who had low high school grades, 39 percent concentrated their studies in one of the social sciences.[22]

Table 2.9 shows the average number of credits taken by students in non-science courses with different high school programs, high school grades, and ability levels. In 4-year and less-than-4-year institutions, students from the high school academic program had taken more credits in the humanities and the social sciences than did other postsecondary students. Students in both 4-year and less-than-4-year institutions who showed higher ability levels were also more likely to have taken more credits in the humanities and the social sciences. This was true despite the fact that high ability students and students from the high school academic program were less likely to have concentrated in the humanities and the social sciences.

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[22]For business concentrators, the relationship between high school grades and ability appears to be reversed. That is, high grades and low ability seem to be related to whether a student concentrated in business. However, this relationship is not statistically significant.

Table 2.9.--Average number of credits taken by students in non-science-oriented academic courses, by high school program, grades, and ability quartile

	Business	Education	Fine Arts	Humanities	Social Science
		4-year institutions			
Total	12	3	7	26	26
High school program					
General	13	4	8	23	22
Academic	12	3	7	28	27
Vocational	13	2	4	19	18
High school grades					
A	15	3	7	28	23
A-B	13	3	7	29	26
B	12	3	8	27	27
B-C	12	3	7	23	26
C	8	2	6	23	22
C-D	7	0	6	14	20
Ability (test quartile)					
Low quartile	10	1	4	18	16
25-49 percentile	9	4	7	20	21
50-75 percentile	12	4	7	23	23
High quartile	13	3	7	30	28
		Less-than-4-year institutions			
Total	10	0	3	10	7
High school program					
General	8	1	2	8	6
Academic	10	0	4	12	10
Vocational	13	0	2	8	4
High school grades					
A	13	0	1	18	10
A-B	12	1	6	13	11
B	11	0	2	11	9
B-C	10	1	2	9	7
C	10	0	2	7	5
C-D	4	0	1	4	3
Ability (test quartile)					
Low quartile	10	1	1	7	4
25-49 percentile	12	0	2	8	6
50-75 percentile	10	0	4	10	8
High quartile	9	0	3	13	11

SOURCE: High School and Beyond 1986

Occupationally Oriented Concentrations

About 22 percent of all students enrolled in less-than-4-year institutions concentrated their studies in one of several occupationally specific subject areas—about 15 percent in non-technical occupational courses and about 7 percent in technical occupational courses. Male students were much more likely to concentrate in technically oriented occupational subjects than were females, with less than 1 percent of females concentrating in these subjects (Table 2.10). Students with low high school grades and low ability levels were also more likely to focus on one of the occupationally oriented subject areas. Almost one-half of all students in less-than-4-year institutions who also had less than "C" averages in high school concentrated in one of these areas.

Table 2.10.--Percentage of students concentrating in occupationally oriented subjects, by selected characteristics

	Non-technically oriented	Technically oriented
Total	15	7
Gender		
Male	15	16
Female	15	1
Race/ethnicity		
Hispanic	25	9
Asian	7	3
Black	16	2
White	14	7
Socioeconomic status		
Low	20	9
25-49	17	7
50-75	14	7
High	10	5
High school program		
General	18	9
Academic	11	3
Vocational	18	12
High school grades		
A	11	0
A-B	5	0
B	12	6
B-C	18	8
C	16	10
C-D	33	15
Ability quartile		
Low	25	14
25-49	19	7
50-75	10	7
High	11	2

SOURCE: High School and Beyond

As with science and non-science-oriented subject areas, the course concentrations of students generally matched their credit earning patterns (Table 2.11). That is, students who were more likely to attempt more credits in a particular subject area were also more likely to concentrate in that subject area. However, while more students from lower socioeconomic backgrounds, with low high school grades or low ability levels, tended to concentrate their studies in occupationally oriented courses, they did not necessarily earn more total credits in these areas. For example, while one-third of all "C-D" students concentrated their postsecondary studies in non-technical occupationally oriented subjects, "C-D" students

had taken, on average, only 14 credits in this area. In contrast, while only 11 percent of "A" students concentrated in non-technical occupationally oriented subject areas, these students had taken, on average, nine credits in this area. This reflects the fact that "A" students had taken greater amounts of credits overall.[23] While not concentrating their studies in these fields, they had taken almost as many credits in these subject areas as did students who were more likely to be concentrators.

[23]The time frame in which students could take credits was four and one-half years.

Table 2.11.--Average number of credits taken by students in occupationally oriented subjects, by selected characteristics

	Non-technically oriented	Technically oriented
Total	9	3
Gender		
Male	9	7
Female	9	0
Race/ethnicity		
Hispanic	13	5
Asian	7	1
Black	9	1
White	9	3
Socioeconomic status		
Low quartile	11	4
25-49 percentile	10	3
50-75 percentile	8	3
High quartile	8	2
High school program		
General	9	4
Academic	8	1
Vocational	10	5
High school grades		
A	9	1
A-B	7	0
B	9	3
B-C	10	3
C	8	4
C-D	14	5
Ability (test quartile)		
Low quartile	12	5
25-49 percentile	10	3
50-75 percentile	8	3
High quartile	8	1

SOURCE: High School and Beyond 1986

Summary

The patterns in students' postsecondary course-taking were similar to the patterns found in the last chapter on high school course-taking. Males were more likely than females to attempt credits in science-oriented courses and less likely than females to attempt credits in non-science-oriented courses. When females concentrated in non-science or occupationally oriented subjects, they were also more likely to concentrate in fields requiring somewhat lower quantitative skills—for example, females in non-science-oriented subjects were more likely to concentrate in education or the humanities; females in occupationally oriented subjects were more likely to concentrate in non-technically oriented subjects, and so on.

Likewise, white and Asian students, those from higher SES families, those with higher postsecondary aspirations, and those with higher academic abilities were more likely to concentrate their coursework in academic subjects: science and non-science-oriented. On the other hand, black and Hispanic students, those from lower SES backgrounds, and those with lower academic aptitudes were more likely to concentrate their coursework in occupationally oriented programs. Furthermore, when black and Hispanic students or students who came out of high school vocational programs did concentrate in academic subjects, they were more likely to concentrate in subjects that presumably had fewer prerequisites in math and science.

However, as in students' high school course-taking patterns, there were some notable exceptions to this general pattern. There were low SES, low achieving, or black or Hispanic students who concentrated in a physical or biological science within the academic curriculum. In addition, there were high SES, high achieving, or white or Asian students who concentrated their coursework in a non-technical occupational field.

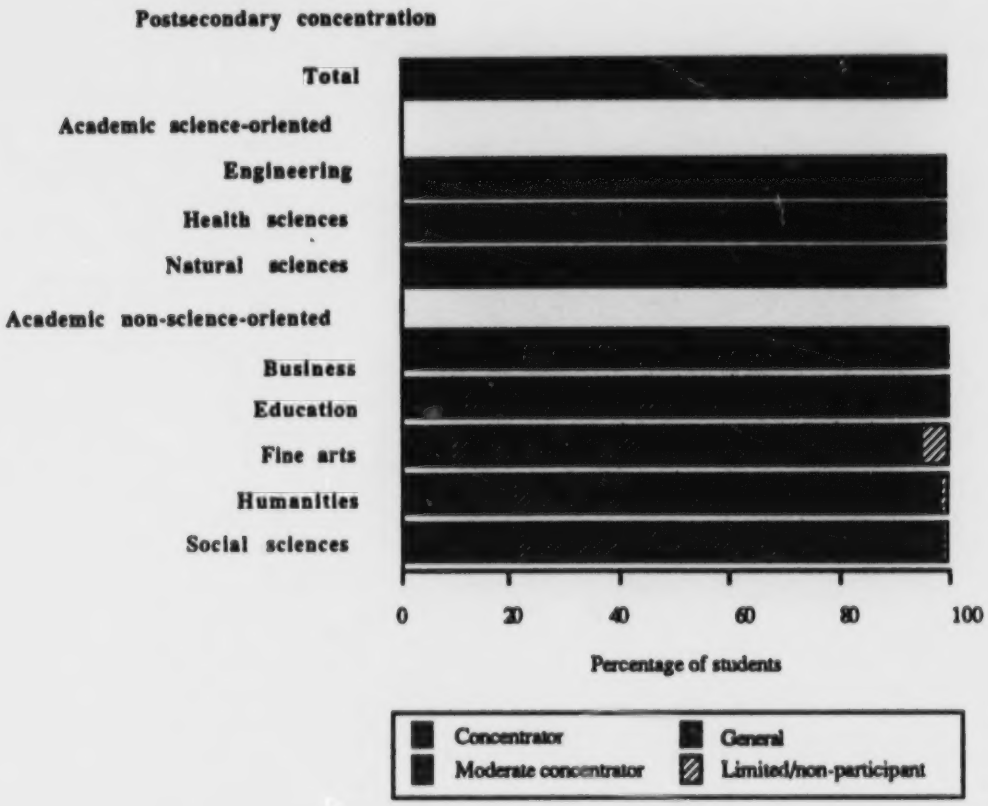
CHAPTER 3
THE RELATIONSHIP BETWEEN POSTSECONDARY COURSE-TAKING PATTERNS AND HIGH SCHOOL COURSE-TAKING PATTERNS

The last two chapters have described the high school course-taking patterns and the postsecondary course-taking patterns of students from the senior class of 1982 who continued on to postsecondary education. We have seen that the characteristics of the students who took academic or vocational coursework in high school matched the characteristics of students who took these subjects in college. As seen in the last two chapters, on average, high SES, high ability students took more rigorous academic courses in both high school and college—low SES, low ability students took more occupationally oriented courses in both high school and college. The question remains, however, whether students within the same postsecondary concentration took similar courses in high school. That is, did postsecondary students concentrating in academic science-oriented courses have similar academic preparation in high school, regardless of their individual characteristics. This chapter addresses this question by examining the relationship between the courses students took in high school and the courses they took in postsecondary education. We will describe the high school mathematics, science, humanities, and vocational course-taking patterns for students who concentrated their postsecondary education in each of the subject areas we examined in Chapter 3—academic science-oriented, academic non-science-oriented, non-technical occupationally oriented, and technical occupationally oriented subject areas.

High School Mathematics Pattern

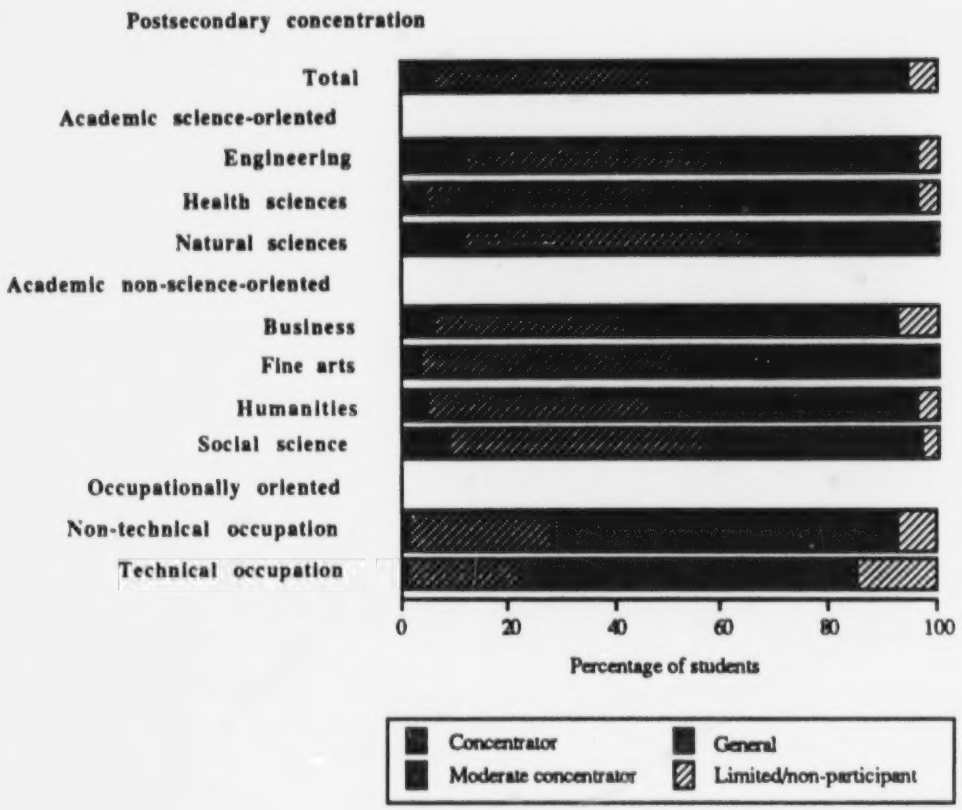
Figures 3.1 and 3.2 show the high school mathematics course-taking pattern for students attending 4-year and less-than-4-year institutions who had taken the majority of their postsecondary credits in each of the postsecondary subject areas. Students attending 4-year institutions and concentrating in science-oriented subject areas took a substantial amount of college preparatory mathematics while in high school. Almost 50 percent of engineering concentrators, 26 percent of health science concentrators, and 34 percent of natural science concentrators attending 4-year institutions were classified as math concentrators in high school. Except for fine arts students, only a small proportion of students in 4-year institutions took less than one credit of high school mathematics. Less than 1 percent of students concentrating in social science, education, and business had taken less than one credit in high school mathematics. All engineering students took at least one credit in high school mathematics.

Figure 3.1.--Percentage of students attending 4-year institutions with specified high school mathematics pattern, by postsecondary course pattern



SOURCE: High School and Beyond 1986

Figure 3.2.--Percentage of students attending less-than-4-year institutions with specified high school mathematics pattern, by postsecondary course pattern



SOURCE: High School and Beyond 1986

However, as we presented in the previous chapter, male science-oriented students were more likely than female science-oriented students to concentrate in engineering and less likely to concentrate in health sciences. Furthermore, as shown in Figure 3.1 above, students in engineering were more likely—and students in health science were less likely—to have taken college preparatory mathematics in high school. Therefore, while overall there was little difference in the mathematics preparation of male and female students, most female students chose not to concentrate in postsecondary subjects that seem to require a solid grounding in college preparatory mathematics. In fact, there were so few female postsecondary students concentrating in engineering that we were unable to reliably estimate their high school mathematics course-taking patterns.

Students in less-than-4-year institutions tended to have taken less high school mathematics than students in 4-year institutions. Furthermore, as one might expect, fewer students concentrating in occupational subjects than students concentrating in academic subjects were college preparatory mathematics students in high school. More than 71 percent of non-technical students and 77 percent of technical students took less than two years of college preparatory mathematics while in high school (i.e., they were general math

students or limited/non-participants in mathematics). More than 7 percent of non-technical students and almost 15 percent of technical students took less than one credit of any kind of secondary mathematics coursework.

Table 3.1 shows that females concentrating in most postsecondary subjects in 4-year institutions had taken about as much college preparatory mathematics as their male counterparts. For example, in 4-year institutions about the same proportion of male and female natural science, business, humanities, and social science students took some amount of college preparatory mathematics in high school. Table 3.2 shows that in less-than-4-year institutions females within a given concentration, in general, tended to have taken less high school mathematics than their male counterparts. In business and natural science, in particular, male students in less-than-4-year institutions had taken more mathematics in high school.

Table 3.1.--Percentage of students attending 4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender

	High school mathematics pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
Male	27	56	16	1
Female	23	57	20	1
Science-oriented				
Engineering credit pattern				
Male	49	46	5	0
Female	†	†	†	†
Health sciences credit pattern				
Male	†	†	†	†
Female	23	72	5	0
Natural sciences credit pattern				
Male	36	53	11	1
Female	32	59	9	0
Non-science-oriented				
Business credit pattern				
Male	22	64	15	0
Female	22	61	17	0
Education credit pattern				
Male	†	†	†	†
Female	12	77	11	0
Fine arts credit pattern				
Male	7	60	33	0
Female	10	61	21	8
Humanities credit pattern				
Male	19	58	21	2
Female	21	48	31	1
Social sciences credit pattern				
Male	23	57	18	2
Female	19	58	23	0

† Not estimated due to small sample size

SOURCE: High School and Beyond 1986

Table 3.2.--Percentage of students attending less-than-4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender

	High school mathematics pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
Male	9	40	46	5
Female	5	42	49	5
Science-oriented				
Engineering credit pattern				
Male	13	48	35	4
Female	†	†	†	†
Health sciences credit pattern				
Male	†	†	†	†
Female	4	55	38	4
Natural sciences credit pattern				
Male	16	60	24	1
Female	8	48	42	1
Non-science-oriented				
Business credit pattern				
Male	17	34	45	3
Female	4	35	53	8
Humanities credit pattern				
Male	8	29	58	5
Female	3	50	44	3
Social sciences credit pattern				
Male	4	45	47	3
Female	12	50	36	2
Non-technical occupational credit pattern				
Male	3	31	61	6
Female	0	25	65	9
Technical occupational credit pattern				
Male	1	22	62	16
Female	†	†	†	†

NOTE: There was insufficient sample size to estimate male and female education and fine arts concentrators.
† Not estimated due to small sample size

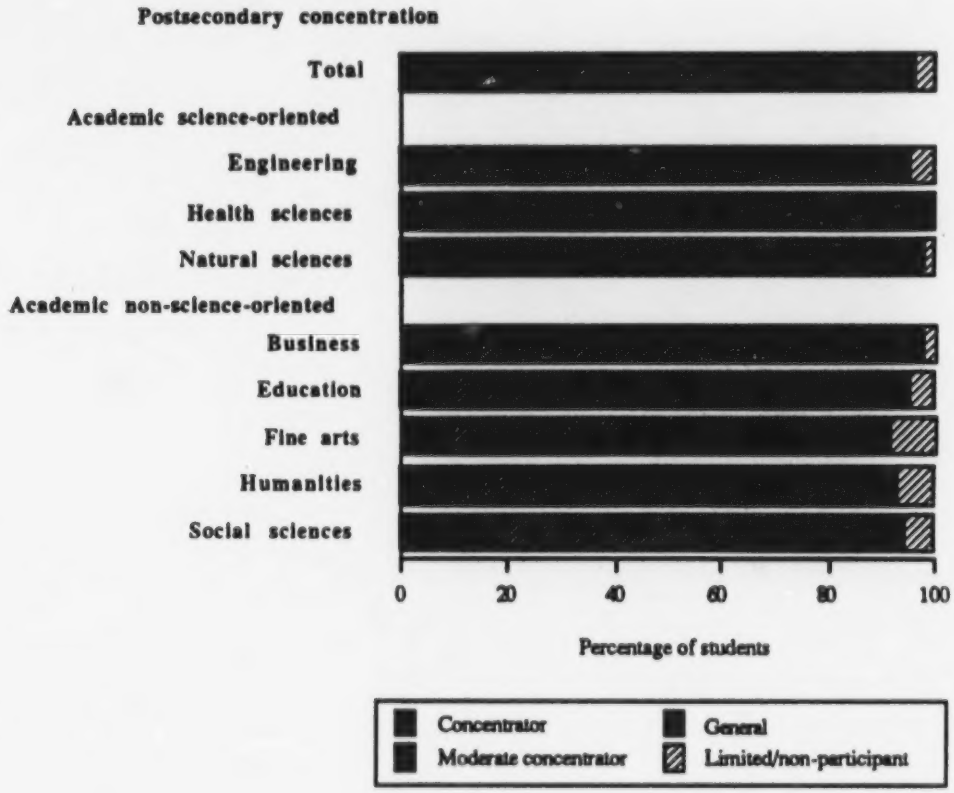
SOURCE: High School and Beyond 1986

High School Science Pattern

Figures 3.3 and 3.4 show the high school science course-taking pattern for students attending 4-year and less-than-4-year institutions who had taken the majority of their postsecondary credits in each of the postsecondary subject areas. Similar to the pattern with high school mathematics, most of the students in 4-year institutions who had taken a majority of their postsecondary credits in science also had taken substantial amounts of credits in high school science coursework. More than 80 percent of students concentrating in engineering, the health sciences, or the natural sciences had taken one or more credits in advanced high school science coursework (i.e., they were either high school science concentrators or moderate science concentrators). Almost 62 percent of postsecondary engineering students were classified as high school science concentrators.

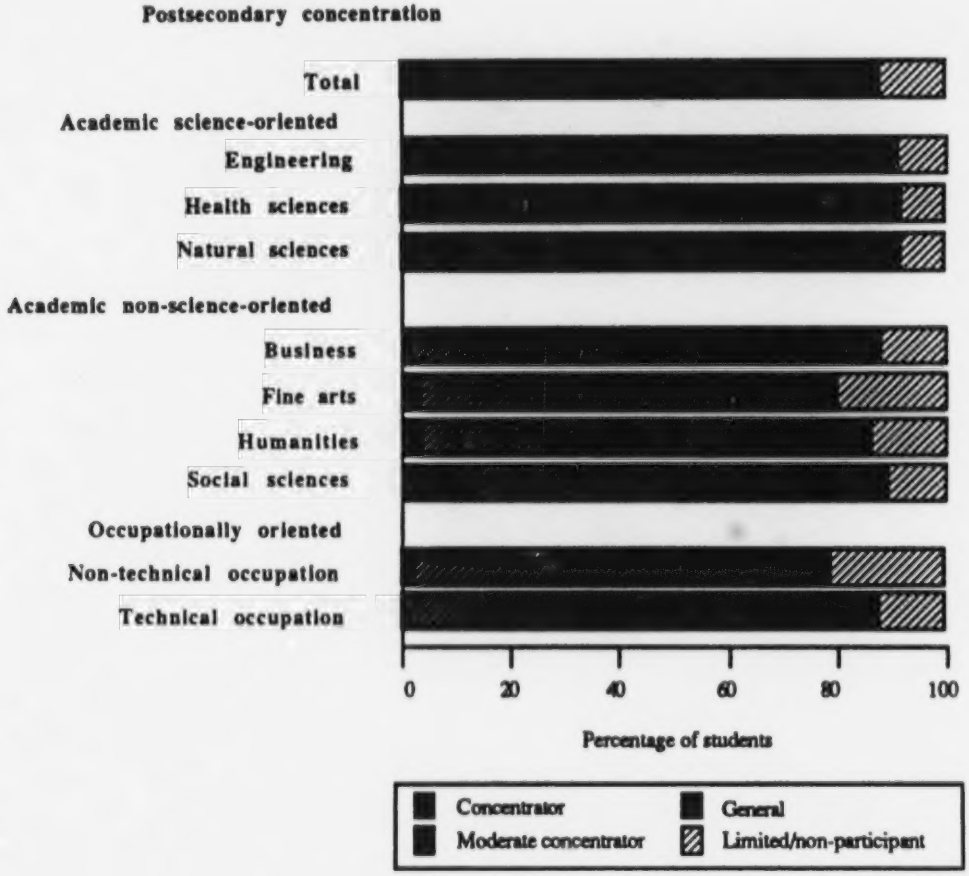
In the section above, we showed that less-than-4-year science students had taken substantial amounts of college preparatory mathematics. However, Figure 3.4 indicates that most students concentrating in science in less-than-4-year institutions had taken little college preparatory science courses. About 55 percent of engineering, natural science, and health science students were either general science students or were limited/non-participants.

Figure 3.3.--Percentage of students attending 4-year institutions with specified high school science pattern, by postsecondary course pattern



SOURCE: High School and Beyond 1986

Figure 3.4.--Percentage of students attending less-than-4-year institutions with specified high school science pattern, by postsecondary course pattern



SOURCE: High School and Beyond 1986

Tables 3.5 and 3.6 show that male students in both 4-year and less-than-4-year institutions tended to take more college preparatory science than did female students. Almost twice as many males in less-than-4-year and in 4-year institutions were classified as high school science concentrators compared with female students. However, unlike the pattern shown above in students' high school mathematics course-taking, the difference between males and females in high school science preparation cannot be explained by the fact that males and females tended to enroll in different academic subjects—health science for females, engineering for males. That is, even within academic subjects, males and females did not have the same high school science preparation. Within subjects in which males and females were fairly equally represented, males had greater high school science preparation than did females. For example, 49 percent of male students in 4-year institutions concentrating in the natural sciences had taken biology, chemistry, or physics in high school (i.e., they were high school science concentrators). Only 31 percent of females with postsecondary natural science concentrations had taken one of these courses in high school. In less-than-4-year institutions, about 9 percent of female natural science concentrators, as compared with 20 percent of male natural science concentrators, were high school science concentrators.

Table 3.3.--Percentage of students attending 4-year institutions with specified high school science pattern, by postsecondary education pattern and gender

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
Male	33	40	24	3
Female	18	48	30	5
Science-oriented				
Engineering credit pattern				
Male	62	30	4	4
Female	†	†	†	†
Health sciences credit pattern				
Male	†	†	†	†
Female	23	66	11	0
Natural sciences credit pattern				
Male	49	36	14	2
Female	30	51	17	2
Non-science-oriented				
Business credit pattern				
Male	17	52	28	3
Female	12	49	37	2
Education credit pattern				
Male	†	†	†	†
Female	10	51	33	6
Fine arts credit pattern				
Male	9	48	41	2
Female	10	46	32	12
Humanities credit pattern				
Male	20	43	31	6
Female	13	43	36	8
Social sciences credit pattern				
Male	28	38	29	6
Female	14	52	28	6

† Not estimated due to small sample size

SOURCE: High School and Beyond 1986

Table 3.4.--Percentage of students attending less-than-4-year institutions with specified high school science pattern, by postsecondary education pattern and gender

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
Male	11	27	52	10
Female	5	31	50	14
Science-oriented				
Engineering credit pattern				
Male	16	25	49	10
Female	†	†	†	†
Health sciences credit pattern				
Male	†	†	†	†
Female	17	28	47	9
Natural sciences credit pattern				
Male	20	40	36	5
Female	9	31	49	11
Non-science-oriented				
Business credit pattern				
Male	7	38	49	6
Female	1	27	60	13
Humanities credit pattern				
Male	3	18	65	14
Female	4	34	48	14
Social sciences credit pattern				
Male	16	27	46	11
Female	13	42	35	11
Non-technical occupational credit pattern				
Male	4	20	57	18
Female	1	27	49	23
Technical occupational credit pattern				
Male	2	12	74	13
Female	†	†	†	†

NOTE: There was insufficient sample size to estimate male and female education and fine arts concentrators.
† Not estimated due to small sample size

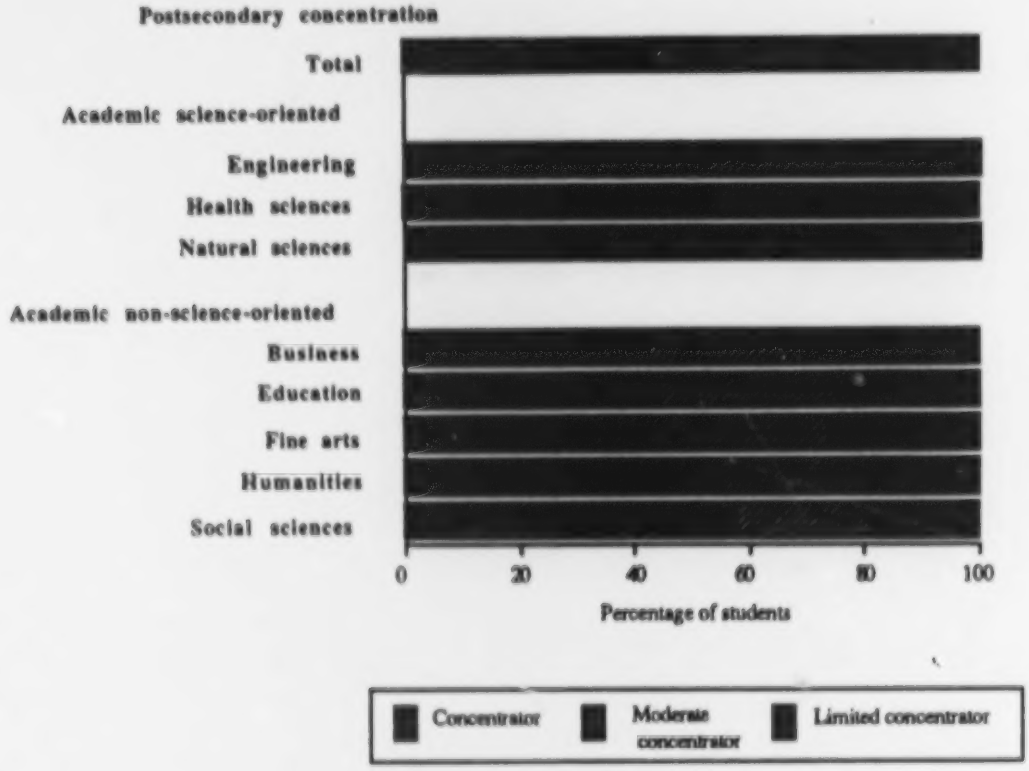
SOURCE: High School and Beyond 1986

High School Humanities Pattern

Figures 3.5 and 3.6 indicate that students who concentrated in non-science courses in 4-year institutions also had taken high school credits in the humanities above basic high school graduation requirements. Almost 43 percent of business students, 45 percent of education students, 55 percent of humanities students, and 58 percent of social science students had taken two or more high school credits above the recommendations of the "New Basics." However, students in 4-year institutions whose postsecondary coursework was not focused in the humanities or social sciences also took substantial amounts of humanities coursework in high school. More than one in three science-oriented students in 4-year institutions had taken substantially more than the basic requirements in high school humanities.

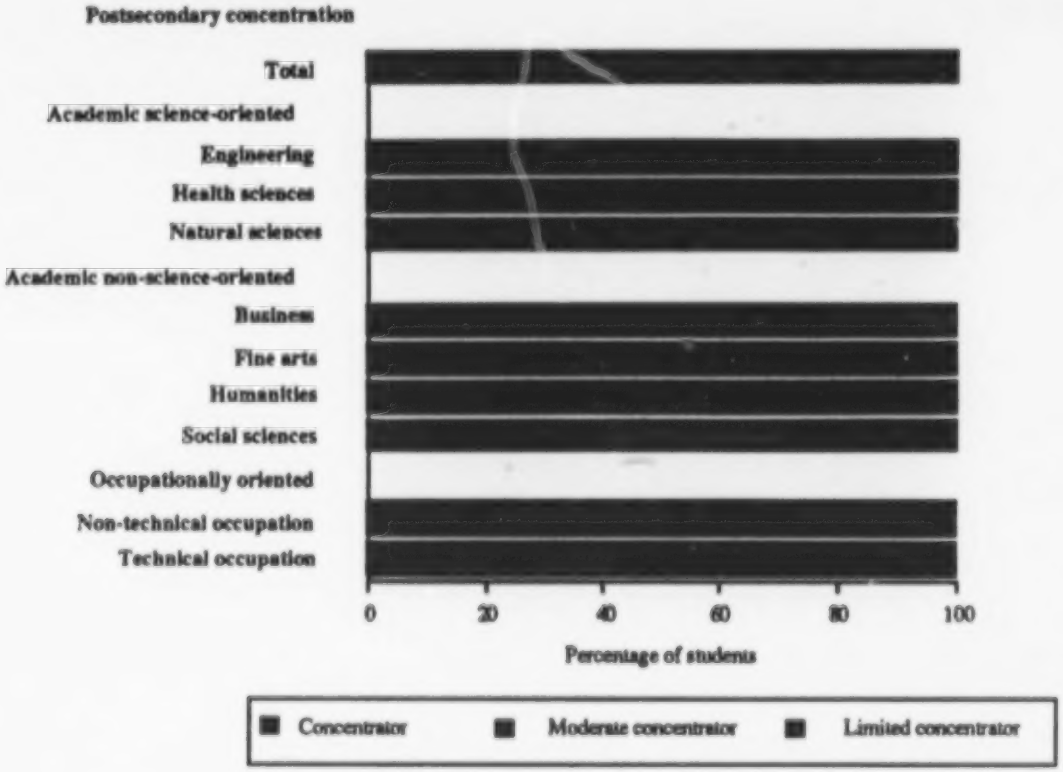
In less-than-4-year institutions, students concentrating in academic courses also tended to earn substantial amounts of high school humanities credits. In less-than-4-year institutions, about 45 percent of health sciences students and 41 percent of social science students had taken two or more credits above the recommendations of the New Basics. Similar to the pattern shown above in students' participation in high school math and science, students in occupationally oriented concentrations, on average, had taken the least amount of credits in high school academic subjects. About 51 percent of non-technical occupational oriented students and 57 percent of technical occupational students had taken less than the recommendations of the New Basics.

Figure 3.5.--Percentage of students in 4-year institutions with specified high school humanities pattern, by postsecondary course pattern



SOURCE: High School and Beyond 1986

Figure 3.6.--Percentage of students in less-than-4-year institutions with specified high school humanities pattern, by postsecondary course pattern



SOURCE: High School and Beyond 1986

Assuming that the courses taken in addition to the New Basics requirement are advanced humanities courses, most 4-year and less-than-4-year non-science concentrators seemed to have had a firm grounding in the humanities while in high school. However, a small but substantial minority of students took little more than the required number of courses in the humanities while in high school, yet concentrated their postsecondary coursework in the non-science-oriented courses including the humanities. More than one in five humanities students in 4-year institutions had less than or equal to the recommended number of credits in high school humanities. In contrast, less than 3 percent of 4-year science-oriented concentrators did not take large amounts of high school advanced science courses, and less than one-half of 1 percent of 4-year science students did not take advanced math in high school. Consequently, there was a much larger proportion of 4-year humanities students who took little or no advanced humanities courses while in high school than there was of postsecondary science students who took no advanced math and science in high school.

Table 3.5.--Percentage of students attending 4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Total			
Male	42	31	28
Female	47	29	24
Science-oriented			
Engineering credit pattern			
Male	33	37	31
Female	†	†	†
Health sciences credit pattern			
Male	†	†	†
Female	39	34	27
Natural sciences credit pattern			
Male	31	33	36
Female	39	37	24
Non-science-oriented			
Business credit pattern			
Male	45	27	28
Female	40	25	34
Education credit pattern			
Male	†	†	†
Female	48	28	24
Fine arts credit pattern			
Male	33	38	29
Female	33	43	25
Humanities credit pattern			
Male	53	28	19
Female	57	22	21
Social sciences credit pattern			
Male	54	26	20
Female	61	22	17

† Not estimated due to small sample size

SOURCE: High School and Beyond 1986

Table 3.6.--Percentage of students attending less-than-4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Total			
Male	24	30	47
Female	31	31	38
Science-oriented			
Engineering credit pattern			
Male	28	36	37
Female	†	†	†
Health sciences credit pattern			
Male	†	†	†
Female	46	28	26
Natural sciences credit pattern			
Male	21	35	45
Female	30	34	36
Non-science-oriented			
Business credit pattern			
Male	28	38	34
Female	26	31	42
Humanities credit pattern			
Male	36	17	47
Female	39	24	37
Social sciences credit pattern			
Male	37	27	37
Female	45	33	22
Non-technical occupational credit pattern			
Male	21	23	57
Female	22	30	48
Technical occupational credit pattern			
Male	15	27	57
Female	†	†	†

NOTE: There was insufficient sample size to estimate male and female education and fine arts concentrators.
† Not estimated due to small sample size

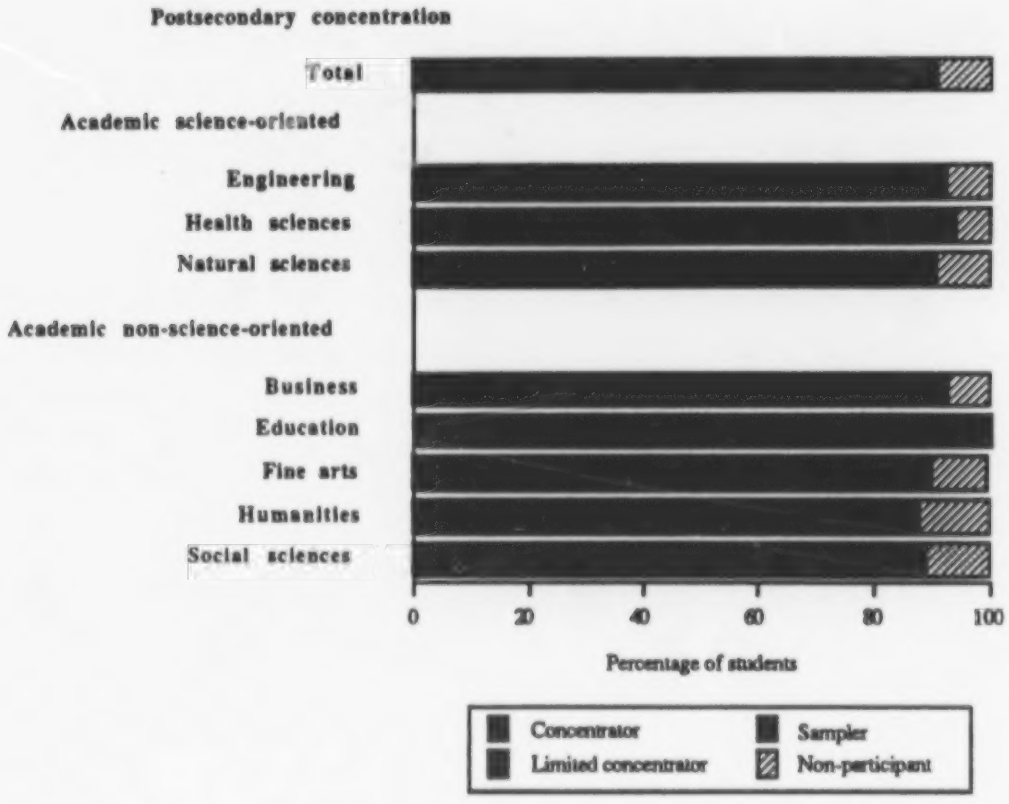
SOURCE: High School and Beyond 1986

Tables 3.5 and 3.6 show that females with postsecondary academic non-science concentrations had slightly more exposure to the high school humanities curriculum than males. Overall, 47 percent of female 4-year students and 31 percent of female less-than-4-year students took substantial amounts of humanities in high school. However, male and female humanities students in both 4-year and less-than-4 year institutions had about the same amount of high school humanities preparation.

High School Vocational Pattern

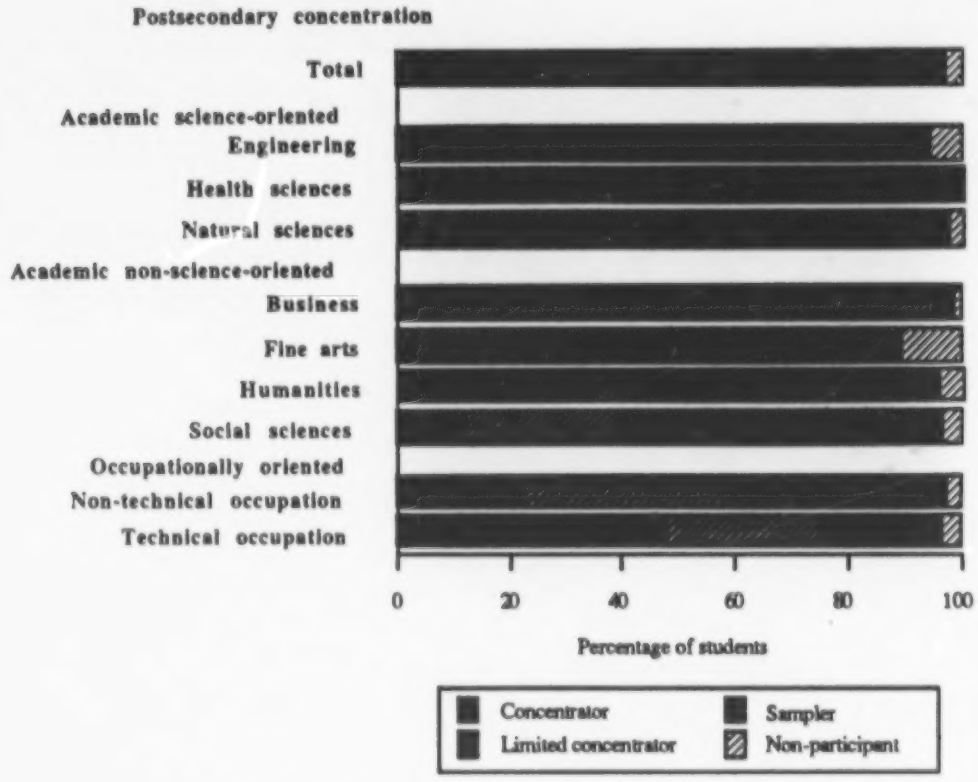
Figures 3.7 and 3.8 show the high school vocational course-taking pattern for students attending 4-year and less-than-4-year institutions. As shown in Figure 3.8, less-than-4-year students whose postsecondary coursework centered on occupational subjects also concentrated their high school coursework in vocational subjects. Almost 23 percent of postsecondary non-technical occupational students and 48 percent of technical occupationally oriented students were classified as high school vocational concentrators. Nevertheless, many students in most postsecondary occupational fields took little in the way of an intensive program of vocational instruction while in high school. About 40 percent of non-technical occupational students and more than 24 percent of technical students took fewer than one vocational course a year during their four years of high school.

Figure 3.7.--Percentage of students attending 4-year institutions with specified high school vocational pattern, by postsecondary course pattern



SOURCE: High School and Beyond 1986

Figure 3.8.--Percentage of students attending less-than-4-year institutions with specified high school vocational pattern, by postsecondary course pattern



SOURCE: High School and Beyond 1986

Furthermore, few 4-year students took many secondary vocational courses. While an overwhelming majority of 4-year students took some vocational courses in high school, most 4-year students had taken few credits in a single high school vocational program. Fewer students attending 4-year than less-than-4-year institutions had taken a concentrated program of vocational education in high school. About 25 percent of all less-than-4-year students were high school vocational concentrators compared with only about 11 percent of 4-year students. About 66 percent of 4-year students were classified as high school vocational samplers. On the other hand, not all high school vocational concentrators continued their vocational subject concentration in postsecondary education. That is, a small but significant portion of students whose postsecondary concentration was in one of several academic subjects took enough vocational courses in high school to be labeled vocational concentrators, or vocational limited concentrators. This was especially true of academic students in less-than-4-year institutions. For example, about 20 percent of academic science concentrators in less-than-4-year institutions had taken four or more credits in a single high school vocational program.

Within postsecondary concentrations, there were few differences between males and females in the proportion of students who had extensive participation in secondary vocational education. Table 3.10 shows that where differences did occur it was almost invariably females who had the more intensive vocational training. Almost twice as many female business students as male business students in both 4-year and less-than-4-year institutions had taken a comprehensive program of vocational courses in high school.

Table 3.7.--Percentage of students attending 4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Total				
Male	8	15	67	10
Female	13	13	66	8
Science-oriented				
Engineering credit pattern				
Male	11	17	64	8
Female	†	†	†	†
Health sciences credit pattern				
Male	†	†	†	†
Female	21	9	64	6
Natural sciences credit pattern				
Male	5	16	71	9
Female	9	15	67	9
Non-science-oriented				
Business credit pattern				
Male	15	21	55	9
Female	26	13	55	6
Education credit pattern				
Male	†	†	†	†
Female	7	18	75	1
Fine arts credit pattern				
Male	1	10	77	12
Female	0	7	86	8
Humanities credit pattern				
Male	6	11	70	13
Female	11	12	66	11
Social sciences credit pattern				
Male	5	14	71	10
Female	8	12	68	12

† Not estimated due to small sample size

SOURCE: High School and Beyond 1986

Table 3.8.--Percentage of students attending less-than-4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Total				
Male	24	24	48	4
Female	27	30	41	2
Science-oriented				
Engineering credit pattern				
Male	28	24	42	6
Female	†	†	†	†
Health sciences credit pattern				
Male	†	†	†	†
Female	22	25	53	0
Natural sciences credit pattern				
Male	12	30	54	4
Female	25	30	43	2
Non-science-oriented				
Business credit pattern				
Male	12	21	63	4
Female	44	26	30	1
Humanities credit pattern				
Male	16	18	58	8
Female	18	32	47	2
Social sciences credit pattern				
Male	18	19	62	1
Female	9	34	53	5
Non-technical occupational credit pattern				
Male	27	30	41	2
Female	20	40	37	3
Technical occupational credit pattern				
Male	51	25	20	4
Female	†	†	†	†

NOTE: There was insufficient sample size to estimate male and female education and fine arts concentrators.
† Not estimated due to small sample size

SOURCE: High School and Beyond 1986

Summary

In general, students chose to concentrate their postsecondary studies in subjects that they had also stressed in high school. For example, postsecondary math and science students completed relatively large amounts of high school math and science coursework. Postsecondary vocational students also had completed relatively large amounts of high school vocational coursework. Similarly, postsecondary humanities students completed relatively large amounts of high school humanities coursework. The pattern was particularly pronounced for postsecondary math and science students. Almost all of the math and science concentrators completed substantially more college preparatory math and science courses while they were in high school than did other postsecondary students.

This pattern held for both male and female students. While males took more credits in high school math and science than did females overall, male and female postsecondary math and science students were about equal in the high amounts of advanced high school math and science credits they took (Table 3.2).

The association between high school course participation and postsecondary coursework was less pronounced for postsecondary humanities students than it was for postsecondary math and science students. For example, while postsecondary math and science students took far more high school math and science than did other postsecondary students, postsecondary humanities students did not take appreciably more high school humanities than did other postsecondary academic students. That is, while most postsecondary humanities students took large amounts of advanced high school humanities courses, comparable proportions of all postsecondary academic students took large amounts of secondary humanities courses.

CHAPTER 4
SUMMARY

In this report we have presented data that describe the high school and postsecondary course-taking patterns of students from the high school class of 1982. Furthermore, we have examined the relationship between the courses students took in high school and those they took in college. Generally, we found that, to a large degree, the types of courses students took during their high school careers corresponded to the types of courses they took in postsecondary education. For example, students who took academic courses in high school tended to take academic courses in college as well. Students completing high school vocational programs were more likely than other students to take occupationally related subjects when they began postsecondary training. Because high school coursework may, in part, reflect a preexisting interest in the subject that students bring with them into their postsecondary studies, this general trend is not particularly surprising. Those high school students who do not take college preparatory math and science may simply choose not to concentrate their postsecondary studies in these subjects.

What is particularly intriguing about the results reported here is that the relationship between high school and postsecondary coursework was stronger in high school math and science than it was for other subjects. Few students who concentrated in science-oriented courses in postsecondary education had not taken college preparatory mathematics in high school. Either these subjects hold the students' interest through high school and college more tenaciously than other subjects or high school preparation is a much more powerful prerequisite for postsecondary pursuits.

Some analysts contend that those high school students who do not participate in specific courses or a particular "sequence" of courses restrict their options to later enroll and progress in some postsecondary fields. High school mathematics and science, in particular, are presumed to act as one of these "critical filters"—systematically sifting students who lack the prerequisite high school coursework out of postsecondary study of mathematics and science. The mastery of mathematics (and to a lesser extent science) is seen in this model as a series of building blocks, in which knowledge from one course provides the foundation for the next course. If one misses an individual building block, the structure cannot be completed. Provided that high school mathematics works as such a filter, one would expect a strong relationship between high school and postsecondary coursework in mathematics and a somewhat weaker relationship in postsecondary subjects in which the linkages between individual courses are not as tight—that is, in subjects where one course, or a sequence of courses, does not necessarily preclude enrollment in other courses. This was the pattern of the findings of this report.

Within subject areas presumably requiring solid math and science skills—that is, engineering, health sciences, and natural sciences—fewer students were able to overcome their lack of math and science preparation in high school. This lack of preparation in advanced mathematics appeared to be particularly difficult to overcome. In fact, virtually every student concentrating in science in a 4-year institution took four solid years of high school mathematics, and few did not take substantial amounts of college preparatory science.

However, as strong as the relationship was between high school mathematics and postsecondary course-taking patterns, there were some exceptions to this general pattern. In some cases, students concentrated their postsecondary coursework in subjects in which

they had little or no preparation while in high school. For example, a small proportion of students participated in postsecondary math and science even though they had little high school preparation in these subjects. One student, typical of those in this group, took little college preparatory math in high school—algebra as a junior and geometry as a senior—but went on to a relatively small college and, starting with a course in basic college math (coupled with a class on math anxiety), completed the two-year calculus series. Nevertheless, students such as this one represented only a small minority of all students. Less than 20 percent of students were able to (or chose to) overcome their lack of preparation for college level mathematics and science coursework.

Another finding of this analysis was the low level of college preparation of many of the minority and lower SES students in this high school class. As we saw in Chapter 2 of this report, most of the black and Hispanic students who went on to postsecondary education did so with little or no advanced high school math or science preparation. These facts are particularly salient when one considers that black and Hispanic youth represent an ever increasing share of the college student body.[12] These students, ill prepared in high school for college level academics, might be "filtered" out of college science-oriented coursework altogether. Those who attempt to overcome their lack of preparation may later find it difficult to succeed in college coursework that calls for these skills.

Thus, the types courses students chose to take in high school do seem to be associated with the types of courses they will take in postsecondary education. While many of these patterns merely reflect the diverse abilities, goals, and interests of individual students, limiting one's pre-collegiate training in mathematics and science, in particular, has serious consequences. From the data we have presented here, the choices made in high school appear to have long-range effects in restricting the range of options open to students who enroll in postsecondary education.

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[12]See H. Hodgkinson, "The Changing Face of Tomorrow's Student," *Change* (May/June 1985).

APPENDIX A

Data and Methodology

METHODOLOGY AND TECHNICAL NOTES

The High School and Beyond Study (HS&B) is a longitudinal data base with a nationally representative probability sample of more than 58,000 1980 high school sophomores and seniors. As part of the long-term National Center for Education Statistics data collection program, the National Education Longitudinal Studies, HS&B provides the most contemporary information available on these students. Both the 1980 senior and sophomore samples were surveyed in 1980, 1982, 1984, and 1986. Sample sizes for the 1984 and 1986 followup surveys were 14,825 for the sophomores and 11,995 for the seniors.

By oversampling institutions with high minority populations, alternative public institutions, and private institutions with high-achieving students, the survey sample for HS&B was designed to include sufficient numbers of students who would be of interest to those addressing policy issues. Followup surveys retained students in these groups at higher rates than other students.

The base year and followup surveys obtained extensive information on each student. Students have reported on such matters as their demographic characteristics, educational experiences, employment experiences, and family formation. In addition, students answered attitudinal questions relating to their self-concept, locus of control, and orientation toward work. Data on high school characteristics and location were also included. These data sets provided all of the information on student characteristics and activities described in this report. For further details concerning the HS&B data, interested readers should consult *High School and Beyond 1980 Senior Cohort Third Follow-Up (1986) Data File User's Manual* (P. Sebring, et al. Chicago: National Opinion Research Center, 1987) and the *High School and Beyond 1980 Sophomore Cohort Third Follow-Up (1986) Data File User's Manual* (P. Sebring, et al. Chicago: National Opinion Research Center, 1987).

In addition to the survey data, the Postsecondary Education Transcript Study was conducted in 1987 for the 1980 high school sophomores. This study collected transcripts from academic and vocational postsecondary institutions that respondents had reported attending since leaving high school. It is important for the reader to keep in mind that the Sophomore Cohort Postsecondary Education Transcript Study is, with one exception, restricted to those students who graduated in 1982 and entered postsecondary institutions in the fall immediately following their high school graduation. The characteristics of these students may be different from all students enrolled in postsecondary education.

Students were drawn into the sample if they began attending any postsecondary institution full-time by Fall 1982 and did not leave until after 1984. The exceptions were students who attended a proprietary institution, private technical or 2-year institution, or public technical institution. These vocational students were drawn into the sample regardless of when they started and whether or not they attended full-time.

Data from these transcripts were merged with information reported in the High School Transcript Study of 1982 to provide the data used in this report. For further details concerning the transcript data, interested readers should consult *High School and Beyond Sophomore Cohort Postsecondary Education Transcript Study Data File User's Manual* (S. Knight et al., Chicago: National Opinion Research Center, 1988) and *High School and Beyond Transcripts Study (1982) Data File User's Manual* (C. Jones et al., Chicago: National Opinion Research Center, 1983).

Accuracy of Estimates

The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors occur because observations are made only on samples of students, not on entire populations. Nonsampling errors occur not only in surveys of sample groups but also in complete censuses of entire populations.

Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all students in all institutions in the sample (some students or institutions refused to participate, or students participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and estimating missing data.

The accuracy of a survey result is determined by the effect of sampling and nonsampling errors. In surveys with sample sizes as large as those in the HS&B study, sampling errors generally are not the primary concern, except where separate estimates are made for relatively small subpopulations such as Asian-Americans or American Indians. The following table displays the location of a few key statistics and their standard errors.

Table/Figure	Subgroup	Estimate	Standard Error
Table 1.1	Concentrator	17.1	0.86
Figure 1.1	Concentrator/Male	19.9	1.23
Figure 3.1	Natural Science Concentrator	34.0	2.24
Figure 3.5	Humanities Concentrator	55.3	2.76
Figure 3.8	Business Concentrator	20.8	2.64

The nonsampling errors are difficult to estimate. The major sources of nonsampling error considered were nonresponse bias and the reliability of the data. The HS&B instrument response rates were all above 85 percent and the item response rates within instruments, for the items used to develop the estimates in this report, were above 95 percent. The weights used to calculate the estimates were constructed in a fashion that compensated for instrument nonresponse. Earlier investigations of nonresponse bias found no major problems (see *High School and Beyond First Follow-up (1982) Sample Design Report*, R. Tourangeau, H. McWilliams, C. Jones, M. Frankel, and F. O'Brien, Chicago: National Opinion Research Center, 1983).

The reliability and validity of the HS&B data have been examined in *Quality of Responses of High School Student to Questionnaire Items* (W. Fetters, P. Stowe, and J. Owings, Washington: National Center for Education Statistics, 1984). This study found that the reliability and validity of responses vary considerably depending on the item and the characteristics of the respondent. Contemporaneous, objective, and factually-oriented items are more reliable and valid than subjective, temporally remote, and ambiguous items. Older, white, or high-achieving students provide more reliable and valid responses than do younger, minority group, or low-achieving students.

Statistical Procedures

This report is purely descriptive in nature and does not use any multivariate techniques in the analysis. Analysts are encouraged to conduct a full multivariate analysis of these data and assess the independent effect of student characteristics and high school course-taking patterns on postsecondary course-taking patterns.

The descriptive comparisons in this report were based on **Student's t** statistics. Comparisons based on the tables include the estimates of the probability of a Type I error, or significance level. The significance levels were determined by calculating the **Student's t** values for the differences between each pair of means, or proportions, and comparing these with published tables of significance levels for two-tailed hypothesis testing. To obtain the confidence level for these comparisons, the significance may be subtracted from 1. For example, a $p < .01$ indicates a confidence of at least 99 percent (1 - 0.01 = 0.99).

High School and Beyond samples, while representative and statistically accurate, are not simple random samples. Students were initially selected within high schools grouped within strata. Sampling rates for institutions within different strata varied, resulting in better data for policy purposes, but at a cost to statistical efficiency. Hence, simple random techniques for the estimation of standard errors frequently underestimate the true standard errors for some estimates. To overcome this problem, standard errors for all estimates in this tabulation were calculated using Taylor residual techniques. All estimates, standard errors, unweighted Ns and weighted Ns are available from the Longitudinal Studies Branch in comma separated form for use with all major spreadsheet software and microcomputers.

Standard errors and unweighted Ns are included in the appendix in each descriptive table for interested readers. **Student's t** values may be computed for comparisons using these tables' estimates with the following formula:

$$t = \frac{P_1 - P_2}{\sqrt{se_1^2 + se_2^2}}$$

where P_1 and P_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors.

There are hazards in reporting statistical tests for each comparison. First, comparisons with large **t** statistics may appear to merit special attention. This can be misleading, because the magnitude of the **t** statistic is related not only to the observed differences in means or percentages but also to the number of students in the specific categories used for comparison. Hence, a small difference compared across a large number of students would produce a large **t** statistic.

A second hazard in reporting statistical tests for each comparison is that, when making multiple comparisons among categories of an independent variable (for example, different levels of income), the probability of a Type I error for these comparisons taken as a group is larger than the probability for a single comparison. When more than one difference between groups of related characteristics or "families" are tested for statistical significance, we must apply a standard that assures a level of significance for all of those comparisons taken together.

In order to reduce the probability of Type I error in a set of multiple comparisons, the author of this report calculated Bonferroni intervals based on families of **Student's t** tests. Families of tests were defined as pairwise tests comparing an outcome for two or more related categories of students. For example, a comparison of proportion of high school math and science concentrators between male and female postsecondary concentrators comprises a family of tests, with eight comparisons (males vs. females for the eight postsecondary concentrations reported here). Comparisons of the proportion of high school math and science concentrators among Hispanic, Asian, black, and white postsecondary concentrators comprise another family of tests, with 48 comparisons possible (Hispanic vs. Asian, Hispanic vs. black, Hispanic vs. white, Asian vs. black, Asian vs. white, and black vs. white for the eight postsecondary concentrations).

The width of a Bonferroni interval depends upon the number of comparisons actually made within a family. When only one pairwise comparison is made, the Bonferroni interval is the same as the confidence interval obtained from a **Student's t** test. The more comparisons that are made, the narrower the Bonferroni interval and, thus, the greater the **t** statistic needed for each difference to guarantee a significance level $\leq .05$ for all of the comparisons taken together.[17]

Comparisons were made in this report only when $p \leq .05/k$ for a particular pairwise comparison, where that comparison was one of k tests within a family. This guarantees both that the individual comparison would have $p \leq .05$ and that when k comparisons were made within a family of possible tests, the significance level of the comparisons would sum to $p \leq .05$.[18]

For example, in a comparison of the proportion of high school math and science concentrators among male and female postsecondary concentrators, eight comparisons are possible. In this family, $k = 8$, and the significance level of each test must be $p \leq .05/8$ or .006. When students are divided into three racial/ethnic groups and all possible comparisons are made, then $k = 48$ and the significance level of each test must be $p \leq .05/48$, or .001.

Variables Used in This Report

Tables in this report display the high school course-taking patterns of students whose postsecondary coursework was concentrated in ten subject areas: engineering, health science, natural science, business, education, fine arts, humanities, social science, non-technical occupational, and technical occupational. Table A.3 presents an abbreviated version of the high school taxonomy used to create the high school course concentration variables. The full taxonomy can be obtained from NCES upon request.

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[17] For a discussion of familywise error rates, see Alan J. Klockars and Gilbert Sax, *Multiple Comparisons* (Beverly Hills, CA: Sage Publications, 1986), 17.

[18] The standard is that $p \leq .05/k$ for each comparison is more stringent than the criterion that the significance level of the comparisons should sum to $p \leq .05$. For tables showing the t statistic required to ensure that $p \leq .05/k$ for a particular family size and degrees of freedom, see Oliver Jean Dunn, "Multiple Comparisons Among Means," *Journal of the American Statistical Association*, 56: 52-64.

Table A3.--Taxonomy of secondary courses

I. ACADEMIC CURRICULUM
1. Mathematics
   a. Basic
   b. General
   c. Applied
   d. Pre-Algebra
   e. Algebra 1
   f. Geometry
   g. Advanced-Other
   h. Advanced Calculus
2. Science
2.1 Survey and Other Science
   a. Basic
   b. Specialized Topics
2.2 Biological Science
   a. Basic
   b. Regular
   c. Advanced, Honors and A.P.
   d. Specialized Topics
2.3 Chemistry
   a. Basic
   b. Regular
   c. Advanced, Honors, and A.P.
   d. Specialized Topics
2.4 Physics
   a. Basic
   b. Regular
   c. Advanced, Honors, and A.P.
   d. Specialized Topics
3. English
3.1 English Survey and Skills
   a. Remedial English
   b. Grade 7 and 8
   c. Grade 9/English 1
   d. Grade 10
   e. Grade 11
   f. Grade 12
   g. Grade 12 A.P.
   h. Language/Writing Skills
3.2 Literature
3.3 Composition and Writing
3.4 Speech
4. Social Studies
4.1 American History
   a. Basic/Remedial
   b. Regular
   c. Advanced, Honors, and Advanced Placement
   d. Specialized Topics
4.2 World History
   a. Regular
   b. Advanced, Honors, and Advanced Placement
   c. Specialized Topics
4.3 American Government and Politics
   a. Basic
   b. Regular
   c. Advanced, Honors, and Advanced Placement
   d. Specialized Topics
4.4 Social Science, Humanities, and Other
   a. Basic Survey Topics
   b. Regular Survey Topics
   c. Advanced, Honors and Advanced Placement
   d. Specialized Topics
5. Fine Arts
5.1 Fine Arts and Crafts
   a. Basic
   b. Regular or Advanced
5.2 Music
   a. Basic
   b. Regular or Advanced
5.3 Dramatic/Dance
6. Foreign Languages
   a. Survey and ESL
   b. Year 1 {7th, 8th, and 9th Grade}
   c. Year 2
   d. Year 3
   e. Year 4 and Higher
6.1 Foreign Languages by Language
   a. Spanish
   b. French
   c. German
   d. Latin
   e. Other (including survey)
   f. English as a Second Language

II. VOCATIONAL EDUCATION CURRICULUM
A. Consumer and Homemaking Education
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
B. General Labor Market Preparation
1. Typewriting I
2. Introductory Industrial
3. Work Experience/Career Exploration
4. General Labor Market Skills

C. Specific Labor Market Preparation
1. Agriculture and Renewable Resources
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
2. Business
2.1 Business and Management
   a. First Course
   b. Second or later course in sequence
   c. Specialty Courses
2.2 Business Support
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
3. Marketing and Distribution
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
4. Health
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
5. Occupational Home Economics
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
6. Trade And Industrial
6.1 Construction Trades
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
6.2 Mechanics and Repairers
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
6.3 Precision Production
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
6.4 Transportation and Material Moving
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
7. Technical and Communications
   a. First course in sequence
   b. Second or later course in sequence
   c. Specialty Courses
8. Specific Labor Market, Unidentified Subject

III. PERSONAL/OTHER CURRICULUM
1. General Skills
2. Health, Physical, and Recreational Education
3. Religion and Theology
4. Military Science

IV. SPECIAL EDUCATION
A. Academic
B. Vocational
C. General

Table A.4 presents the postsecondary program areas that were aggregated into subject areas used in this report. Students were determined to be postsecondary concentrators in the following manner.

First, postsecondary courses and credits were standardized across students, courses, and institutions. The data from the Postsecondary Transcript Study were abstracted from school records of greatly varying structure and content. For example, some institutions reported course credits in clock hours rather than the more conventional course hours format. (A typical credit hour course will be 3 to 5 credits.) In counting course credits for this tabulation, all clock hour credit courses were converted to credit hour courses.

While a number of courses were flagged in the data file as clock hour courses, many of the courses identified as credit hour courses reported credits that were unbelievably high—in some cases reporting more than 100 credits for a single course. All credit hour courses for which 6 or more credits were reported were therefore visually inspected, simultaneously along with information on the type and length of term, the type of institution, and other courses reported. This examination suggested that almost all courses reporting 9 to 15 credits were, in fact, reporting credit hours. However, courses reporting more than 15 credits appeared to be reporting clock hours rather than credit hours. For these courses the reported credits were

divided by 15 to determine adjusted credits; for example, a course reporting 45 credits was assumed to be meeting for 45 hours, and was counted as a 3-credit course. Courses reporting more than 45 credits, most of which are practice-oriented vocational courses, also appeared to be reporting hours of contact. However, the number of hours required for a credit was unclear because these were not standard academic courses, and they involved considerable hours out of class. Therefore, all reported credits over 45 were divided by 30, and credits over 60 were divided by 45 to obtain adjusted credits. Fortunately, given the unavoidable error in this procedure, the numbers of courses with such large reported credits was small.

There were also obvious differences in the value of credits from institutions with different types of terms. In examining the credits of full-time students under semester and quarter systems, there were no obvious differences in the average credit per course or the total number of credits taken per term. However, students on quarter systems generally take three rather than two terms, and therefore should accumulate 50 percent more credits during a full-time school year. To compensate, therefore, all credits received under quarter systems were multiplied by two-thirds in order to adjust all credits to semester-length credits. However, for variable-length terms—which are most common in trade and technical programs and in vocational rather than academic programs—there is not enough information on the intensity of course-taking to make an equivalent transformation. Consequently, data on reported credits without any adjustment for term type were used.

After course credits were standardized, courses were grouped into ten subject areas. Courses were included in each area according to the standard program/course codes used to classify courses and programs in the Postsecondary Transcript data. Pattern variables, based on the students' participation in each subject area were then created. With these pattern variables, students' course-taking patterns in each of the ten subject areas were classified into 5 categories: 1) no credits attempted, 2) 1 to 6 credits attempted, 3) more than 6 credits attempted, 4) more than 20 percent of student's total credits attempted in the subject area, and 5) most of the student's credits or 40 percent of student's credits attempted in the subject area. This report examined only the last of these categories—using it to classify students as subject area concentrators. Other analysts, in conducting their own exploration of the relationship between high school and postsecondary course-taking patterns, may wish to use the other categories of the pattern variables.

Table A4.--Taxonomy of postsecondary courses

Engineering
- Engineering
- Civil engineering
- Electrical engineering
- Mechanical engineering
- Engineering and related technologies

Health
- Allied health
- Practical nursing
- Health sciences
- Nursing

Natural science
- Computer and information sciences
- Computer programming
- Data processing
- Life sciences
- Mathematics
- Calculus

Business
- Business and management
- Accounting
- Banking and finance
- Business and office
- Secretarial and related programs
- Marketing and distributing

Education
- Education
- Adult and continuing
- Elementary
- Junior high
- Pre-elementary
- Secondary

Humanities
- Communications
- Journalism
- Foreign languages
- German
- French
- Spanish
- Letters
- Composition
- American literature
- English literature
- Philosophy and religion
- Theology
- Liberal general studies

Social sciences
- Psychology
- Public affairs
- Social work
- Social sciences
- Anthropology
- Economics
- Geography
- History
- Political science
- Sociology

Non-technical occupational
- Area and ethnic studies
- Consumer, personal
- Home economics
- Vocational home economics
- Law
- Library and archival sciences
- Parks and recreation
- Functional skills
- Protective services
- Construction trades
- Precision production
- Transportation

Technical occupational
- Agribusiness
- Agricultural sciences
- Renewable natural resources
- Communications technologies
- Science technologies
- Mechanics and repairers

The following pages provide the percentages, standard errors, and unweighted Ns for all data shown in figures and tables in this report.

APPENDIX B

Supporting Tables

The following pages provide the percentages, standard errors, and unweighted Ns for all data shown in Figures 1.1 through 3.8 and Tables 1.1 through 3.8.

Table 1.1a
Percentage of postsecondary students with specified high school mathematics patterns, by selected characteristics

	High school math pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
%	17.1	51.2	29.2	2.5
SE	0.86	1.07	1.04	0.38
Unwtd. N	4905	4905	4905	4905
High school program				
General				
%	5.8	45.8	44.3	4.2
SE	1.06	2.52	2.49	1.27
Unwdt. N	712	712	712	712
Academic				
%	23.2	57.5	17.9	1.4
SE	1.14	1.29	1.09	0.30
Unwdt. N	3636	3636	3636	3636
Vocational				
%	2.3	28.0	63.8	5.9
SE	0.70	2.37	2.56	1.27
Unwdt. N	549	549	549	549

Table 1.1a
Percentage of postsecondary students with specified high school mathematics patterns, by selected characteristics (cont.)

	High school math pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
High school grades				
A				
%	43.4	49.7	6.2	0.7
SE	3.61	3.66	1.69	0.54
Unwdt. N	356	356	356	356
A-B				
%	29.5	58.6	11.4	0.5
SE	2.03	2.19	1.35	0.28
Unwdt. N	1051	1051	1051	1051
B				
%	17.1	58.1	22.9	1.9
SE	1.49	1.92	1.66	0.50
Unwdt. N	1462	1462	1462	1462
B-C				
%	8.7	49.4	39.1	2.9
SE	0.98	2.04	2.00	0.61
Unwdt. N	1284	1284	1284	1284
C				
%	3.3	35.2	55.3	6.2
SE	0.82	2.65	2.92	1.80
Unwdt. N	620	620	620	620
C-D				
%	0.8	15.2	75.2	8.9
SE	0.55	3.72	5.03	3.73
Unwdt. N	126	126	126	126
D				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwdt. N	6	6	6	6

Table 1.1a
Percentage of postsecondary students with specified high school mathematics patterns, by selected characteristics (cont.)

	High school math pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Ability (test quartile)				
Low quartile				
%	0.3	16.1	76.0	7.7
SE	0.18	2.47	3.46	2.44
Unwdt. N	323	323	323	323
25-49 percentile				
%	2.9	41.9	50.9	4.3
SE	0.70	2.38	2.48	1.10
Unwdt. N	703	703	703	703
50-75 percentile				
%	7.6	60.2	29.1	3.1
SE	0.91	1.89	1.78	0.63
Unwdt. N	1473	1473	1473	1473
High quartile				
%	31.0	55.5	13.0	0.5
SE	1.44	1.56	1.21	0.19
Unwdt. N	2344	2344	2344	2344
Postsecondary plans in 1982				
No postsecondary				
%	0.9	21.9	69.5	7.7
SE	0.64	5.96	6.46	3.51
Unwdt. N	87	87	87	87
Vocational/technical training				
%	3.0	34.0	58.3	4.7
SE	0.90	2.96	3.13	1.24
Unwdt. N	389	389	389	389
Some college (less than 4 years)				
%	7.1	44.6	43.3	5.0
SE	1.01	2.33	2.41	1.25
Unwdt. N	826	826	826	826
Bachelor's degree				
%	19.3	58.1	21.0	1.6
SE	1.32	1.60	1.38	0.40
Unwdt. N	1835	1835	1835	1835
Advanced degree				
%	27.2	55.4	16.6	0.8
SE	1.69	1.83	1.41	0.38
Unwdt. N	1746	1746	1746	1746

Table 1.2a
Percentage of postsecondary students with specified high school science patterns, by selected characteristics

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
%	17.7	38.8	36.5	7.0
SE	0.75	1.04	1.1	0.59
Unwtd. N	4905	4905	4905	4905
High school program				
General				
%	5.8	29.1	52.7	12.5
SE	1.04	2.18	2.56	1.69
Unwtd. N	712	712	712	712
Academic				
%	24.3	45.7	26.7	3.4
SE	1.01	1.21	1.17	0.44
Unwtd. N	3636	3636	3636	3636
Vocational				
%	1.3	17.4	63.9	17.4
SE	0.42	2.06	2.73	2.24
Unwtd. N	549	549	549	549

Table 1.2a
Percentage of postsecondary students with specified high school science patterns, by selected characteristics (cont.)

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
High school grades				
A				
%	40.4	42.1	13.9	3.6
SE	3.31	3.57	2.77	1.29
Unwtd. N	356	356	356	356
A-B				
%	27.5	48.5	21.8	2.2
SE	1.77	2.05	1.83	0.53
Unwtd. N	1051	1051	1051	1051
B				
%	19.8	41.1	32.9	6.1
SE	1.41	1.74	1.75	0.89
Unwtd. N	1462	1462	1462	1462
B-C				
%	9.6	35.8	45.7	8.9
SE	1.01	1.85	2.08	1.13
Unwtd. N	1284	1284	1284	1284
C				
%	4.4	27.3	56.1	12.1
SE	1.08	2.55	2.9	2.02
Unwtd. N	620	620	620	620
C-D				
%	1.0	13.9	64.9	20.2
SE	0.65	3.99	6.03	5.35
Unwtd. N	126	126	126	126
D				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwtd. N	6	6	6	6

Table 1.2a
Percentage of postsecondary students with specified high school science patterns, by selected characteristics (cont.)

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Ability (test quartile)				
Low quartile				
%	0.8	13.3	66.3	19.6
SE	0.49	2.12	3.41	3.04
Unwtd. N	323	323	323	323
25-49 percentile				
%	3.0	28.1	55.2	13.7
SE	0.8	2.27	2.57	1.84
Unwtd. N	703	703	703	703
50-75 percentile				
%	8.6	41.9	42.9	6.6
SE	0.95	1.88	1.84	1.01
Unwtd. N	1473	1473	1473	1473
High quartile				
%	31.4	46	20.2	2.4
SE	1.3	1.41	1.36	0.45
Unwtd. N	2344	2344	2344	2344
Postsecondary plans in 1982				
No postsecondary				
%	0.9	12.6	72.7	13.8
SE	0.64	4.1	5.77	4.64
Unwtd. N	87	87	87	87
Vocational/technical training				
%	0.7	23.5	58.5	17.3
SE	0.37	2.77	3.38	2.60
Unwtd. N	389	389	389	389
Some college (less than 4 years)				
%	7.4	32.6	49.4	10.6
SE	1.29	2.08	2.32	1.41
Unwtd. N	826	826	826	826
Bachelor's degree				
%	19.6	44.6	31.1	4.7
SE	1.26	1.73	1.57	0.68
Unwtd. N	1835	1835	1835	1835
Advanced degree				
%	29.4	43.4	24.3	3.0
SE	1.47	1.62	1.61	0.69
Unwtd. N	1746	1746	1746	1746

Table 1.3a
Percentage of postsecondary students with specified high school computer science patterns, by selected characteristics

	High school computer science pattern	
	Participant	Non-participant
Total		
%	17.6	82.4
SE	0.80	0.80
Unwtd. N	4977	4977
High school program		
General		
%	14.3	85.7
SE	1.66	1.66
Unwtd. N	743	743
Academic		
%	19.6	80.4
SE	0.99	0.99
Unwtd. N	3659	3659
Vocational		
%	12.3	87.7
SE	1.8	1.8
Unwtd. N	567	567

Table 1.3a
Percentage of postsecondary students with specified high school computer science patterns, by selected characteristics (cont.)

	High school computer science pattern	
	Participant	Non-participant
High school grades		
A		
%	29.8	70.2
SE	3.38	3.38
Unwtd. N	358	358
A-B		
%	21.2	78.8
SE	1.71	1.71
Unwtd. N	1055	1055
B		
%	18.4	81.6
SE	1.38	1.38
Unwtd. N	1476	1476
B-C		
%	15.7	84.3
SE	1.27	1.27
Unwtd. N	1300	1300
C		
%	8.9	91.1
SE	1.59	1.59
Unwtd. N	638	638
C-D		
%	12.6	87.4
SE	3.72	3.72
Unwtd. N	140	140
D		
%	low n	low n
SE	low n	low n
Unwtd. N	10	10

Table 1.3a
Percentage of postsecondary students with specified high school computer science patterns, by selected characteristics (cont.)

	High school computer science pattern	
	Participant	Non-participant
Ability (test quartile)		
Low quartile		
%	8.7	91.3
SE	1.84	1.84
Unwtd. N	348	348
25-49 percentile		
%	12.9	87.1
SE	1.62	1.62
Unwtd. N	714	714
50-75 percentile		
%	14.6	85.4
SE	1.25	1.25
Unwtd. N	1489	1489
High quartile		
%	22.5	77.5
SE	1.28	1.28
Unwtd. N	2363	2363
Postsecondary plans in 1982		
No postsecondary		
%	9.3	90.7
SE	4.03	4.03
Unwtd. N	98	98
Vocational/technical training		
%	10.8	89.2
SE	1.88	1.88
Unwtd. N	408	408
Some college (less than 4 years)		
%	12.2	87.8
SE	1.36	1.36
Unwtd. N	842	842
Bachelor's degree		
%	23.0	77.0
SE	1.37	1.37
Unwtd. N	1850	1850
Advanced degree		
%	17.9	82.1
SE	1.32	1.32
Unwtd. N	1757	1757

Table 1.4a
Percentage of postsecondary students with specified high school humanities patterns, by selected characteristics

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Total			
%	37.8	30.4	31.8
SE	1.22	0.95	1.13
Unwtd. N	4977	4977	4977
High school program			
General			
%	29.7	33.4	37.0
SE	2.22	2.39	2.56
Unwtd. N	743	743	743
Academic			
%	44.3	29.1	26.6
SE	1.49	1.13	1.23
Unwtd. N	3659	3659	3659
Vocational			
%	17.9	33.0	49.1
SE	2.12	2.42	2.65
Unwtd. N	567	567	567

Table 1.4a
Percentage of postsecondary students with specified high school humanities patterns, by selected characteristics (cont.)

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
High school grades			
A			
%	45.0	24.5	30.5
SE	3.59	3.13	3.15
Unwtd. N	358	358	358
A-B			
%	43.4	30.7	25.9
SE	2.18	2.06	1.88
Unwtd. N	1055	1055	1055
B			
%	39.1	31.5	29.4
SE	2.02	1.71	1.78
Unwtd. N	1476	1476	1476
B-C			
%	37.4	29.3	33.3
SE	2.0	1.73	1.9
Unwtd. N	1300	1300	1300
C			
%	27.9	32.5	39.6
SE	2.45	2.61	2.76
Unwtd. N	638	638	638
C-D			
%	18.7	28.6	52.7
SE	3.99	5.16	5.84
Unwtd. N	140	140	140
D			
%	low n	low n	low n
SE	low n	low n	low n
Unwtd. N	10	10	10

Table 1.4a
Percentage of postsecondary students with specified high school humanities patterns, by selected characteristics (cont.)

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Ability (test quartile)			
Low quartile			
%	21.8	26.9	51.3
SE	2.97	3.37	3.91
Unwtd. N	348	348	348
25-49 percentile			
%	26.0	31.9	42.1
SE	2.15	2.33	2.53
Unwtd. N	714	714	714
50-75 percentile			
%	35.2	32.9	31.9
SE	1.76	1.69	1.79
Unwtd. N	1489	1489	1489
High quartile			
%	46.8	29.2	24.0
SE	1.72	1.41	1.36
Unwtd. N	2363	2363	2363
Postsecondary plans in 1982			
No postsecondary			
%	19.5	34.6	45.9
SE	4.71	6.31	6.56
Unwtd. N	98	98	98
Vocational/technical training			
%	25.8	30.6	43.6
SE	2.91	2.9	3.41
Unwtd. N	408	408	408
Some college (less than 4 years)			
%	33.1	28.3	38.6
SE	2.24	2.03	2.21
Unwtd. N	842	842	842
Bachelor's degree			
%	37.7	32.8	29.6
SE	1.63	1.52	1.57
Unwtd. N	1850	1850	1850
Advanced degree			
%	46.8	28.6	24.6
SE	1.98	1.54	1.58
Unwtd. N	1757	1757	1757

Table 1.5a
Percentage of postsecondary students with specified high school vocational patterns, by selected characteristics

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Total				
%	16.1	19.8	57.6	6.4
SE	0.87	0.86	1.15	0.69
Unwtd. N	4905	4905	4905	4905
High school program				
General				
%	15.6	33.6	48.7	2.1
SE	1.99	2.51	2.68	0.63
Unwtd. N	712	712	712	712
Academic				
%	9.0	13.9	68.5	8.6
SE	0.72	0.81	1.25	0.95
Unwtd. N	3636	3636	3636	3636
Vocational				
%	49.9	31.2	17.4	1.5
SE	3.00	2.80	2.02	0.67
Unwtd. N	549	549	549	549

Table 1.5a
Percentage of postsecondary students with specified high school vocational patterns, by selected characteristics (cont.)

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
High school grades				
A				
%	13.5	11.0	64.1	11.4
SE	2.41	2.05	3.52	2.30
Unwtd. N	356	356	356	356
A-B				
%	11.2	14.1	66.9	7.8
SE	1.32	1.46	2.01	1.17
Unwtd. N	1051	1051	1051	1051
B				
%	14.5	17.3	62.2	6.0
SE	1.27	1.40	1.82	1.07
Unwtd. N	1462	1462	1462	1462
B-C				
%	18.1	27.5	49.0	5.4
SE	1.58	1.87	1.98	0.96
Unwtd. N	1284	1284	1284	1284
C				
%	23.1	23.2	49.0	4.8
SE	2.71	2.31	2.96	1.33
Unwtd. N	620	620	620	620
C-D				
%	25.7	23.8	44.8	5.7
SE	5.50	5.22	5.94	2.79
Unwtd. N	126	126	126	126
D				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwtd. N	6	6	6	6

Table 1.5a
Percentage of postsecondary students with specified high school vocational patterns, by selected characteristics (cont.)

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Ability (test quartile)				
Low quartile				
%	42.9	30.3	26.2	0.6
SE	4.06	3.64	3.28	0.30
Unwtd. N	323	323	323	323
25-49 percentile				
%	25.3	29.6	42.5	2.6
SE	2.29	2.22	2.52	0.90
Unwtd. N	703	703	703	703
50-75 percentile				
%	17.2	22.0	57.5	3.3
SE	1.41	1.53	1.82	0.62
Unwtd. N	1473	1473	1473	1473
High quartile				
%	7.2	13.0	69.0	10.8
SE	0.72	1.01	1.49	1.28
Unwtd. N	2344	2344	2344	2344
Postsecondary plans in 1982				
No postsecondary				
%	39.4	25.0	31.8	3.8
SE	7.05	6.05	6.02	2.64
Unwtd. N	87	87	87	87
Vocational/technical training				
%	32.5	34.1	31.5	1.9
SE	3.17	3.29	3.27	0.76
Unwtd. N	389	389	389	389
Some college (less than 4 years)				
%	27.1	26.0	44.6	2.3
SE	2.28	2.27	2.40	0.59
Unwtd. N	826	826	826	826
Bachelor's degree				
%	10.9	18.7	65.0	5.4
SE	1.01	1.23	1.57	0.87
Unwtd. N	1835	1835	1835	1835
Advanced degree				
%	8.0	11.8	68.2	12.0
SE	0.98	1.11	1.70	1.41
Unwtd. N	1746	1746	1746	1746

Table 2.1a
Percentage of students attending 4-year and less-than-4-year institutions, by selected characteristics

	Institution type	
	Less-than-4-year	4-year
Total		
%	35.9	64.1
SE	1.05	0.68
Unwtd. N	5425	5425
Gender		
Male		
%	32.9	67.1
SE	1.46	0.98
Unwtd. N	2475	2475
Female		
%	38.4	61.5
SE	1.37	0.86
Unwtd. N	2950	2950
Race/ethnicity		
Hispanic		
%	55.8	44.1
SE	3.51	1.74
Unwtd. N	672	672
Asian		
%	22.9	77.2
SE	3.41	2.87
Unwtd. N	255	255
Black		
%	43.2	56.8
SE	2.96	1.62
Unwtd. N	756	756
White		
%	33.9	66.0
SE	1.17	0.77
Unwtd. N	3647	3647

Table 2.1a
Percentage of students attending 4-year and less-than-4-year institutions, by selected characteristics (cont.)

	Institution type	
	Less-than-4-year	4-year
Socioeconomic status		
Low quartile		
%	56.6	43.5
SE	2.76	1.34
Unwtd. N	818	818
25-49 percentile		
%	48.2	51.7
SE	2.18	1.28
Unwtd. N	1014	1014
50-75 percentile		
%	38.0	62.0
SE	1.78	1.17
Unwtd. N	1448	1448
High quartile		
%	21.2	78.8
SE	1.45	1.15
Unwtd. N	2114	2114
High school program		
General		
%	50.0	50.1
SE	2.47	1.36
Unwtd. N	829	829
Academic		
%	25.1	74.8
SE	1.05	0.86
Unwtd. N	3974	3974
Vocational		
%	68.5	31.6
SE	2.32	1.13
Unwtd. N	614	614

Table 2.1a
Percentage of students attending 4-year and less-than-4-year institutions, by selected characteristics (cont.)

	Institution type	
	Less-than-4-year	4-year
High school grades		
A		
%	10.8	89.2
SE	2.19	2.37
Unwtd. N	452	452
A-B		
%	21.2	78.9
SE	1.65	1.42
Unwtd. N	1182	1182
B		
%	30.9	69.0
SE	1.64	1.18
Unwtd. N	1570	1570
B-C		
%	45.3	54.7
SE	2.09	1.20
Unwtd. N	1382	1382
C		
%	59.4	40.7
SE	2.66	1.43
Unwtd. N	671	671
C-D		
%	72.6	27.4
SE	5.10	2.32
Unwtd. N	154	154
D		
%	low n	low n
SE	low n	low n
Unwtd. N	12	12
Ability (test quartile)		
Low quartile		
%	70.4	29.7
SE	3.00	1.54
Unwtd. N	400	400
25-49 percentile		
%	59.8	40.1
SE	2.28	1.24
Unwtd. N	789	789
50-75 percentile		
%	40.4	59.6
SE	1.82	1.16
Unwtd. N	1633	1633
High quartile		
%	17.7	82.2
SE	1.13	1.05
Unwtd. N	630	630

Table 2.2a
Percentage of students concentrating in science-oriented courses in postsecondary education, by gender, race/ethnicity, and socioeconomic status

	4-year			Less-than-4-year		
	Engineering	Health science	Natural science	Engineering	Health science	Natural science
Total						
%	3.8	2.8	28.3	7.0	5.8	22.6
SE	0.43	0.36	1.11	0.85	0.83	1.43
Unwgtd. N	3435	3435	3435	1600	1600	1600
Gender						
Male						
%	7.2	0.6	33.0	15.5	0.5	24.1
SE	0.87	0.25	1.65	1.89	0.32	2.10
Unwgtd. N	1605	1605	1605	682	682	682
Female						
%	0.9	4.7	24.3	1.2	9.4	21.6
SE	0.26	0.64	1.42	0.47	1.35	1.96
Unwgtd. N	1830	1830	1830	918	918	918
Race/ethnicity						
Hispanic						
%	3.2	3.4	24.3	3.2	2.3	20.6
SE	1.08	1.97	3.77	1.14	1.30	4.81
Unwgtd. N	358	358	358	253	253	253
Asian						
%	7.8	0.9	59.5	3.7	0.0	44.0
SE	2.26	0.75	5.68	2.65	0.0	8.30
Unwgtd. N	178	178	178	50	50	50
Black						
%	2.4	0.9	34.1	6.7	3.7	30.8
SE	1.13	0.45	3.40	2.38	1.92	4.73
Unwgtd. N	501	501	501	210	210	210
White						
%	3.9	3.1	27.0	7.5	6.7	21.2
SE	0.5	0.41	1.20	1.02	1.06	1.49
Unwgtd. N	2352	2352	2352	1042	1042	1042

Table 2.2a
Percentage of students concentrating in science-oriented courses in postsecondary education, by gender, race/ethnicity, and socioeconomic status (cont.)

	4-year			Less-than-4-year		
	Engin-eering	Health science	Natural science	Engin-eering	Health science	Natural science
Socioeconomic status						
Low quartile						
%	3.0	1.3	25.5	4.6	4.4	20.9
SE	0.91	0.48	3.30	1.35	1.41	4.00
Unwgtd. N	425	425	425	351	351	351
25-49 percentile						
%	4.3	2.6	32.9	8.6	8.0	18.6
SE	1.17	0.88	2.78	1.69	1.70	2.36
Unwgtd. N	532	532	532	412	412	412
50-75 percentile						
%	3.5	3.8	30.7	8.3	5.8	19.8
SE	0.76	0.80	2.13	1.59	1.62	2.16
Unwgtd. N	870	870	870	452	452	452
High quartile						
%	4.0	2.6	26.2	6.5	4.6	31.6
SE	0.65	0.52	1.46	2.13	2.16	3.12
Unwgtd. N	1602	1602	1602	361	361	361

Table 2.3a
Average number of credits taken by students in postsecondary science coursework, by gender, race/ethnicity, and socioeconomic status

	4-year			Less-than-4-year		
	Engineering	Health science	Natural science	Engineering	Health science	Natural science
Total						
%	4.6	2.7	30.2	3.5	2.7	12.6
SE	0.41	0.25	0.67	0.41	0.33	0.51
Unwgtd. N	3435	3435	3435	1600	1600	1600
Gender						
Male						
%	8.4	0.8	34.0	7.7	0.6	14.7
SE	0.75	0.17	1.00	0.92	0.18	0.9
Unwgtd. N	1605	1605	1605	682	682	682
Female						
%	1.3	4.3	26.9	0.7	4.1	11.2
SE	0.33	0.44	0.84	0.21	0.53	0.62
Unwgtd. N	1830	1830	1830	918	918	918
Race/ethnicity						
Hispanic						
%	4.2	2.3	25.2	1.7	1.0	12.3
SE	1.08	0.69	2.12	0.53	0.34	2.55
Unwgtd. N	358	358	358	253	253	253
Asian						
%	16.3	2.1	56.4	3.6	0.6	19.9
SE	5.14	0.84	6.43	1.76	0.36	4.25
Unwgtd. N	178	178	178	50	50	50
Black						
%	2.9	1.6	25.5	3.2	1.4	11.9
SE	0.86	0.41	1.58	1.09	0.53	1.36
Unwgtd. N	501	501	501	210	210	210
White						
%	4.6	2.9	30.2	3.8	3.1	12.7
SE	0.44	0.29	0.73	0.51	0.42	0.59
Unwgtd. N	2352	2352	2352	1042	1042	1042

Table 2.3a
Average number of credits taken by students in postsecondary science coursework, by gender, race/ethnicity, and socioeconomic status (cont.)

	4-year			Less-than-4-year		
	Engineering	Health science	Natural science	Engineering	Health science	Natural science
Socioeconomic status						
Low quartile						
%	3.0	1.8	23.7	2.5	2.8	10.5
SE	0.72	0.41	1.58	0.74	0.8	1.37
Unwgtd. N	425	425	425	351	351	351
25-49 percentile						
%	4.5	1.9	30.0	3.6	3.1	11.6
SE	0.99	0.46	1.83	0.72	0.62	0.88
Unwgtd. N	532	532	532	412	412	412
50-75 percentile						
%	4.9	3.2	31.6	4.2	2.4	12.0
SE	0.85	0.52	1.46	0.75	0.53	0.8
Unwgtd. N	870	870	870	452	452	452
High quartile						
%	4.8	2.9	30.6	3.8	2.7	16.3
SE	0.6	0.4	0.86	1.04	0.86	1.15
Unwgtd. N	1602	1602	1602	361	361	361

Table 2.4a
Percentage of students concentrating in science-oriented courses in postsecondary education, by high school program, grades, and ability quartile

	4-year			Less-than-4-year		
	Engineering	Health science	Natural science	Engineering	Health science	Natural science
Total						
%	3.8	2.8	28.3	7.0	5.8	22.6
SE	0.43	0.36	1.11	0.85	0.83	1.43
Unwgtd. N	3435	3435	3435	1600	1600	1600
High school program						
General						
%	1.9	1.6	25.1	5.7	6.4	17.5
SE	0.81	0.75	2.67	1.68	1.88	2.45
Unwgtd. N	391	391	391	360	360	360
Academic						
%	4.1	3.0	29.6	7.6	6.7	27.0
SE	0.51	0.41	1.24	1.15	1.32	1.95
Unwgtd. N	2842	2842	2842	850	850	850
Vocational						
%	4.0	2.9	19.5	7.4	3.7	20.0
SE	1.78	1.56	3.44	1.56	1.10	3.35
Unwgtd. N	198	198	198	386	386	386
High school grades						
A						
%	8.4	3.9	36.7	5.2	25.5	11.2
SE	2.04	1.22	3.41	2.74	11.44	6.07
Unwgtd. N	396	396	396	38	38	38
A-B						
%	5.7	4.3	29.9	9.0	9.8	30.1
SE	0.98	0.87	2.17	2.38	3.66	4.05
Unwgtd. N	915	915	915	201	201	201
B						
%	3.0	2.5	28.6	5.6	6.6	23.8
SE	0.64	0.59	1.86	1.38	1.68	2.51
Unwgtd. N	1054	1054	1054	390	390	390
B-C						
%	1.3	1.6	25.2	6.2	5.1	23.0
SE	0.5	0.57	2.29	1.26	1.46	2.82
Unwgtd. N	728	728	728	534	534	534
C						
%	0.8	0.8	19.8	6.3	2.0	20.5
SE	0.72	0.4	3.44	1.95	0.83	3.15
Unwgtd. N	287	287	287	335	335	335
C-D						
%	0.3	0.8	13.2	17.6	3.7	13.2
SE	0.35	0.83	6.7	5.23	2.57	4.21
Unwgtd. N	54	54	54	90	90	90

Table 2.4a
Percentage of students concentrating in science-oriented courses in postsecondary education, by high school program, grades, and ability quartile (cont.)

	4-year			Less-than-4-year		
	Engineering	Health science	Natural science	Engineering	Health science	Natural science
Ability (test quartile)						
Low quartile						
%	1.5	0.0	20.4	3.8	5.2	17.3
SE	1.49	0.03	4.63	1.61	1.7	4.1
Unwgtd. N	129	129	129	252	252	252
25-49 percentile						
%	1.8	2.3	26.4	7.9	4.6	18.6
SE	1.01	1.16	3.32	1.85	1.22	2.33
Unwgtd. N	334	334	334	396	396	396
50-75 percentile						
%	2.7	3.9	24.9	5.4	5.1	25.4
SE	0.72	0.81	2.00	1.13	1.25	2.36
Unwgtd. N	930	930	930	543	543	543
High quartile						
%	4.7	2.7	30.3	10.6	8.6	26.3
SE	0.61	0.44	1.43	2.02	2.78	3.00
Unwgtd. N	2006	2006	2006	380	380	380

Table 2.5a
Average number of credits taken by students in postsecondary science coursework, by high school program, grades, and ability quartile

	4-year			Less-than-4-year		
	Engineering	Health science	Natural science	Engineering	Health science	Natural science
Total						
%	4.6	2.7	30.2	3.5	2.7	12.6
SE	0.41	0.25	0.67	0.41	0.33	0.51
Unwgtd. N	3435	3435	3435	1600	1600	1600
High school program						
General						
%	2.0	2.1	23.9	2.6	2.5	8.3
SE	0.71	0.59	1.36	0.76	0.67	0.75
Unwgtd. N	391	391	391	360	360	360
Academic						
%	5.2	2.9	32.3	4.0	3.1	16.1
SE	0.46	0.29	0.78	0.63	0.49	0.83
Unwgtd. N	2842	2842	2842	850	850	850
Vocational						
%	3.5	1.6	17.9	3.7	2.1	10.5
SE	1.60	0.58	1.8	0.77	0.61	1.05
Unwgtd. N	198	198	198	386	386	386
High school grades						
A						
%	10.0	3.3	41.2	5.5	12.1	19.0
SE	1.71	0.86	1.95	2.93	5.24	4.54
Unwgtd. N	396	396	396	38	38	38
A-B						
%	7.0	4.0	35.5	5.3	5.4	20.3
SE	1.02	0.64	1.43	1.57	1.41	1.81
Unwgtd. N	915	915	915	201	201	201
B						
%	3.5	2.5	29.2	3.5	2.9	12.5
SE	0.51	0.39	1.11	0.76	0.63	0.78
Unwgtd. N	1054	1054	1054	390	390	390
B-C						
%	1.6	1.9	24.1	2.7	2.1	12.1
SE	0.39	0.38	1.12	0.54	0.47	0.89
Unwgtd. N	728	728	728	534	534	534
C						
%	1.4	0.6	17.5	2.8	1.1	10.2
SE	0.69	0.21	1.22	0.87	0.37	1.24
Unwgtd. N	287	287	287	335	335	335
C-D						
%	0.5	0.6	17.0	6.7	1.2	6.1
SE	0.36	0.27	4.11	2.12	1.03	0.84
Unwgtd. N	54	54	54	90	90	90

Table 2.5a
Average number of credits taken by students in postsecondary science coursework, by high school program, grades, and ability quartile (cont.)

	4-year			Less-than-4-year		
	Engin-eering	Health science	Natural science	Engin-eering	Health science	Natural science
Ability (test quartile)						
Low quartile						
%	1.8	1.2	21.6	1.8	2.8	8.8
SE	0.98	0.91	3.32	0.74	0.9	1.35
Unwgtd. N	129	129	129	252	252	252
25-49 percentile						
%	1.7	2.4	21.7	3.9	2.1	10.2
SE	0.66	0.69	1.5	0.83	0.49	0.78
Unwgtd. N	334	334	334	396	396	396
50-75 percentile						
%	2.9	3.3	24.3	2.6	2.1	13.2
SE	0.7	0.49	0.99	0.55	0.4	0.8
Unwgtd. N	930	930	930	543	543	543
High quartile						
%	6.0	2.7	34.4	5.8	4.1	17.5
SE	0.57	0.33	0.93	1.19	1.03	1.43
Unwgtd. N	2006	2006	2006	380	380	380

Table 2.6a
Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by gender, race/ethnicity, and socioeconomic status

	Business	Education	Fine arts	Human-ities	Social science
	4-year institutions				
Total					
%	14.8	2.5	4.3	20.9	18.3
SE	0.87	0.35	0.48	0.96	0.90
Unwgtd. N	3435	3435	3435	3435	3435
Gender					
Male					
%	15.1	0.4	3.5	17.2	18.1
SE	1.30	0.22	0.57	1.29	1.29
Unwgtd. N	1605	1605	1605	1605	1605
Female					
%	14.5	4.3	5.1	24.1	18.4
SE	1.13	0.60	0.70	1.35	1.21
Unwgtd. N	1830	1830	1830	1830	1830
Race/ethnicity					
Hispanic					
%	7.2	1.5	4.5	33.7	18.7
SE	1.60	0.77	1.98	4.65	3.37
Unwgtd. N	358	358	358	358	358
Asian					
%	3.7	0.0	2.7	8.2	17.8
SE	1.57	0.0	1.46	2.34	3.77
Unwgtd. N	178	178	178	178	178
Black					
%	12.0	1.1	4.4	22.0	13.5
SE	2.42	0.65	1.44	2.80	2.08
Unwgtd. N	501	501	501	501	501
White					
%	15.6	2.8	4.4	20.7	18.7
SE	0.98	0.41	0.53	1.09	1.02
Unwgtd. N	2352	2352	2352	2352	2352

Table 2.6a
Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by gender, race/ethnicity, and socioeconomic status (cont.)

	Business	Education	Fine arts	Human-ities	Social science
			4-year institutions		
Socioeconomic status					
Low quartile					
%	14.0	2.0	1.7	20.4	18.7
SE	2.81	0.92	0.69	3.14	2.75
Unwgtd. N	425	425	425	425	425
25-49 percentile					
%	17.1	2.3	2.6	18.1	12.7
SE	2.22	0.86	0.77	2.13	1.87
Unwgtd. N	532	532	532	532	532
50-75 percentile					
%	14.6	3.3	6.4	19.7	14.3
SE	1.55	0.77	1.12	1.84	1.50
Unwgtd. N	870	870	870	870	870
High quartile					
%	14.1	2.3	4.2	22.4	22.0
SE	1.14	0.5	0.67	1.34	1.36
Unwgtd. N	1602	1602	1602	1602	1602
			Less-than-4-year institutions		
Total					
%	21.4	0.3	3.3	12.2	7.5
SE	1.40	0.16	0.61	1.17	0.84
Unwgtd. N	1600	1600	1600	1600	1600
Gender					
Male					
%	7.8	0.0	4.0	11.4	7.5
SE	1.30	0.0	0.92	1.95	1.27
Unwgtd. N	682	682	682	682	682
Female					
%	30.8	0.4	2.9	12.7	7.5
SE	2.10	0.27	0.82	1.51	1.13
Unwgtd. N	918	918	918	918	918

Table 2.6a
Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by gender, race/ethnicity, and socioeconomic status (cont.)

	Business	Education	Fine arts	Human-ities	Social science
Race/ethnicity					
Hispanic					
%	19.4	0.0	1.7	17.3	4.4
SE	3.98	0.0	0.92	4.16	1.88
Unwgtd. N	253	253	253	253	253
Asian					
%	17.4	0.0	6.0	19.9	1.3
SE	5.73	0.0	3.36	7.26	1.28
Unwgtd. N	50	50	50	50	50
Black					
%	26.4	1.0	0.7	14.2	2.2
SE	4.49	0.96	0.42	3.33	0.97
Unwgtd. N	210	210	210	210	210
White					
%	20.9	0.2	3.9	11.2	8.7
SE	1.62	0.13	0.78	1.36	1.06
Unwgtd. N	1042	1042	1042	1042	1042
Socioeconomic status					
Low quartile					
%	27.7	0.0	1.1	12.6	2.6
SE	3.83	0.0	0.42	2.40	0.94
Unwgtd. N	351	351	351	351	351
25-49 percentile					
%	25.6	0.1	4.7	8.3	4.8
SE	2.71	0.12	1.63	1.86	1.28
Unwgtd. N	412	412	412	412	412
50-75 percentile					
%	18.4	0.4	2.8	13.9	9.8
SE	2.18	0.42	0.92	2.30	1.74
Unwgtd. N	452	452	452	452	452
High quartile					
%	15.9	0.4	4.0	12.9	12.2
SE	2.51	0.40	1.24	2.39	2.36
Unwgtd. N	361	361	361	361	361

Table 2.7a
Average number of credits taken by students in non-science-oriented academic courses, by gender, race/ethnicity, and socioeconomic status

	Business	Education	Fine arts	Humanities	Social science
	4-year institutions				
Total					
%	12.2	3.0	7.2	26.4	25.6
SE	0.53	0.26	0.37	0.52	0.52
Unwgtd. N	3435	3435	3435	3435	3435
Gender					
Male					
%	13.2	1.1	6.2	24.4	25.6
SE	0.83	0.18	0.5	0.73	0.76
Unwgtd. N	1605	1605	1605	1605	1605
Female					
%	11.4	4.7	8.0	28.2	25.6
SE	0.65	0.44	0.54	0.68	0.64
Unwgtd. N	1830	1830	1830	1830	1830
Race/ethnicity					
Hispanic					
%	8.2	2.2	6.1	25.5	23.2
SE	1.37	0.65	1.46	2.11	1.92
Unwgtd. N	358	358	358	358	358
Asian					
%	6.7	1.4	7.6	22.3	30.4
SE	1.21	0.64	1.35	1.52	2.11
Unwgtd. N	178	178	178	178	178
Black					
%	10.0	1.9	5.3	20.6	18.7
SE	1.39	0.59	0.67	0.95	1.04
Unwgtd. N	501	501	501	501	501
White					
%	12.7	3.2	7.5	27.2	26.3
SE	0.59	0.3	0.42	0.6	0.59
Unwgtd. N	2352	2352	2352	2352	2352

Table 2.7a
Average number of credits taken by students in non-science-oriented academic courses, by gender, race/ethnicity, and socioeconomic status (cont.)

	Business	Education	Fine arts	Humanities	Social science
		4-year institutions			
Socioeconomic status					
Low quartile					
%	10.2	2.3	4.1	18.7	21.2
SE	1.45	0.59	0.52	0.88	1.52
Unwgtd. N	425	425	425	425	425
25-49 percentile					
%	12.9	2.8	5.2	21.5	21.1
SE	1.56	0.59	0.73	1.06	0.92
Unwgtd. N	532	532	532	532	532
50-75 percentile					
%	11.4	3.7	8.4	24.6	23.2
SE	0.83	0.57	0.86	0.97	0.82
Unwgtd. N	870	870	870	870	870
High quartile					
%	12.7	2.9	7.7	30.2	28.9
SE	0.73	0.38	0.55	0.74	0.79
Unwgtd. N	1602	1602	1602	1602	1602
		Less-than-4-year institutions			
Total					
%	10.2	0.4	2.7	9.6	7.3
SE	0.58	0.12	0.32	0.33	0.31
Unwgtd. N	1600	1600	1600	1600	1600
Gender					
Male					
%	5.8	0.3	3.4	9.4	7.3
SE	0.66	0.19	0.59	0.55	0.51
Unwgtd. N	682	682	682	682	682
Female					
%	13.2	0.5	2.2	9.8	7.4
SE	0.84	0.15	0.35	0.43	0.39
Unwgtd. N	918	918	918	918	918

Table 2.7a
Average number of credits taken by students in non-science-oriented academic courses, by gender, race/ethnicity, and socioeconomic status (cont.)

	Business	Education	Fine arts	Human-ities	Social science
Race/ethnicity					
Hispanic					
%	7.9	0.3	1.4	8.6	5.6
SE	1.34	0.23	0.31	0.98	0.74
Unwgtd. N	253	253	253	253	253
Asian					
%	8.5	0.1	4.4	14.3	7.7
SE	2.42	0.04	2.09	2.67	1.66
Unwgtd. N	50	50	50	50	50
Black					
%	12.1	1.3	1.1	8.5	5.6
SE	2.19	0.82	0.25	0.92	0.77
Unwgtd. N	210	210	210	210	210
White					
%	10.1	0.3	3.0	9.9	7.8
SE	0.65	0.07	0.41	0.39	0.37
Unwgtd. N	1042	1042	1042	1042	1042
Socioeconomic status					
Low quartile					
%	10.8	0.5	1.3	7.9	4.5
SE	1.19	0.38	0.26	0.64	0.43
Unwgtd. N	351	351	351	351	351
25-49 percentile					
%	13.0	0.2	2.1	8.5	6.3
SE	1.4	0.12	0.41	0.56	0.52
Unwgtd. N	412	412	412	412	412
50-75 percentile					
%	8.7	0.4	2.5	9.6	7.9
SE	0.97	0.26	0.46	0.62	0.62
Unwgtd. N	452	452	452	452	452
High quartile					
%	8.7	0.5	4.1	12.4	10.4
SE	1.15	0.17	0.95	0.86	0.77
Unwgtd. N	361	361	361	361	361

Table 2.8a
Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by high school program, grades, and ability quartile

	Business	Education	Fine arts	Humanities	Social science
		4-year institutions			
Total					
%	14.8	2.5	4.3	20.9	18.3
SE	0.87	0.35	0.48	0.96	0.9
Unwgtd. N	3435	3435	3435	3435	3435
High school program					
General					
%	15.3	5.0	4.3	24.1	16.4
SE	2.46	1.37	1.19	2.76	2.38
Unwgtd. N	391	391	391	391	391
Academic					
%	14.1	2.3	4.5	20.3	18.8
SE	0.90	0.37	0.54	1.09	1.01
Unwgtd. N	2842	2842	2842	2842	2842
Vocational					
%	19.7	0.9	2.2	21.4	16.1
SE	4.12	0.48	1.51	3.59	3.12
Unwgtd. N	198	198	198	198	198
High school grades					
A					
%	19.4	1.8	4.8	16.7	7.0
SE	2.73	0.93	1.46	2.44	1.56
Unwgtd. N	396	396	396	396	396
A-B					
%	15.2	2.6	3.2	21.4	16.0
SE	1.62	0.64	0.68	1.86	1.56
Unwgtd. N	915	915	915	915	915
B					
%	13.5	3.0	4.8	21.2	19.9
SE	1.38	0.66	0.92	1.68	1.66
Unwgtd. N	1054	1054	1054	1054	1054
B-C					
%	16.5	2.8	4.3	18.6	21.8
SE	1.99	0.81	0.99	1.91	2.06
Unwgtd. N	728	728	728	728	728
C					
%	8.1	1.3	4.8	30.1	24.0
SE	1.98	0.79	1.62	3.85	3.37
Unwgtd. N	287	287	287	287	287
C-D					
%	5.4	0.3	8.1	20.3	39.2
SE	3.75	0.32	6.25	6.85	10.06
Unwgtd. N	54	54	54	54	54

Table 2.8a

Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by high school program, grades, and ability quartile (cont.)

	Business	Education	Fine arts	Human-ities	Social science
Ability (test quartile)					
Low quartile					
%	13.6	1.9	2.1	23.8	11.3
SE	4.39	1.55	1.65	5.17	3.74
Unwgtd. N	129	129	129	129	129
25-49 percentile					
%	11.1	4.0	4.5	24.8	22.2
SE	2.33	1.45	1.54	3.13	2.92
Unwgtd. N	334	334	334	334	334
50-75 percentile					
%	15.6	4.5	4.9	19.4	15.6
SE	1.71	0.9	0.99	1.92	1.63
Unwgtd. N	930	930	930	930	930
High quartile					
%	15.0	1.5	4.3	20.9	19.3
SE	1.12	0.35	0.57	1.17	1.18
Unwgtd. N	2006	2006	2006	2006	2006
		Less-than-4-year institutions			
Total					
%	21.4	0.3	3.3	12.2	7.5
SE	1.4	0.16	0.61	1.17	0.84
Unwgtd. N	1600	1600	1600	1600	1600
High school program					
General					
%	19.5	0.9	4.0	13.8	7.8
SE	2.51	0.63	1.66	3.01	1.83
Unwgtd. N	360	360	360	360	360
Academic					
%	18.3	0.1	3.8	14.1	9.7
SE	1.84	0.07	0.83	1.55	1.36
Unwgtd. N	850	850	850	850	850
Vocational					
%	28.3	0.0	2.0	7.6	3.4
SE	3.04	0.0	0.83	1.56	1.01
Unwgtd. N	386	386	386	386	386

Table 2.8a
Percentage of students concentrating in non-science-oriented academic courses in postsecondary education, by high school program, grades, and ability quartile (cont.)

	Business	Education	Fine arts	Human-ities	Social science
High school grades					
A					
%	21.8	0.0	0.0	16.3	9.2
SE	8.15	0.0	0.0	7.53	6.9
Unwgtd. N	38	38	38	38	38
A-B					
%	21.3	1.0	9.0	8.8	7.5
SE	3.44	0.97	3.28	2.16	2.27
Unwgtd. N	201	201	201	201	201
B					
%	21.3	0.1	2.9	14.5	8.9
SE	2.48	0.13	0.94	2.72	1.92
Unwgtd. N	390	390	390	390	390
B-C					
%	21.1	0.3	2.5	12.3	5.9
SE	2.34	0.29	0.79	1.85	1.25
Unwgtd. N	534	534	534	534	534
C					
%	24.1	0.0	3.0	12.2	9.0
SE	3.13	0.0	1.22	2.67	2.02
Unwgtd. N	335	335	335	335	335
C-D					
%	11	0.0	0.1	6.3	4.7
SE	3.97	0.0	0.05	3.08	2.66
Unwgtd. N	90	90	90	90	90
Ability (test quartile)					
Low quartile					
%	21.7	0.0	0.9	11.6	3.4
SE	3.55	0.0	0.59	2.52	1.31
Unwgtd. N	252	252	252	252	252
25-49 percentile					
%	26.9	0.4	1.3	12.4	3.5
SE	2.75	0.35	0.54	2.09	1.08
Unwgtd. N	396	396	396	396	396
50-75 percentile					
%	20.7	0.4	6.4	11.8	10.7
SE	2.24	0.38	1.61	1.97	1.78
Unwgtd. N	543	543	543	543	543
High quartile					
%	16.3	0.1	3.5	13.1	10.4
SE	2.51	0.14	1.14	2.6	2.0
Unwgtd. N	380	380	380	380	380

Table 2.9a
Average number of credits taken by students in non-science-oriented academic courses, by high school program, grades, and ability quartile

	Business	Education	Fine Arts	Humanities	Social Science
	4-year institutions				
Total					
Number	12.2	3.0	7.2	26.4	25.6
SE	0.53	0.26	0.37	0.52	0.52
Unwgtd. N	3435	3435	3435	3435	3435
High school program					
General					
Number	13.2	4.4	8.0	22.6	22.2
SE	1.39	0.88	1.18	1.24	1.17
Unwgtd. N	391	391	391	391	391
Academic					
Number	12.0	2.9	7.3	27.7	26.9
SE	0.56	0.28	0.41	0.59	0.60
Unwgtd. N	2842	2842	2842	2842	2842
Vocational					
Number	12.6	2.3	3.8	18.6	17.6
SE	2.12	0.68	0.73	1.63	1.49
Unwgtd. N	198	198	198	198	198

Table 2.9a
Average number of credits taken by students in non-science-oriented academic courses, by high school program, grades, and ability quartile (cont.)

	Business	Education	Fine Arts	Humanities	Social Science
	4-year institutions				
High school grades					
A					
Number	14.7	3.2	7.3	28.3	22.9
SE	1.97	0.66	1.19	1.30	1.02
Unwgtd. N	396	396	396	396	396
A-B					
Number	12.9	3.4	6.9	29.0	26.1
SE	0.95	0.53	0.56	1.07	0.94
Unwgtd. N	915	915	915	915	915
B					
Number	12.1	3.4	7.8	26.9	27.2
SE	0.85	0.50	0.76	0.98	0.90
Unwgtd. N	1054	1054	1054	1054	1054
B-C					
Number	12.1	2.5	7.3	23.4	25.8
SE	1.09	0.44	0.88	0.91	1.15
Unwgtd. N	728	728	728	728	728
C					
Number	7.7	1.5	5.5	22.6	22.2
SE	1.17	0.53	1.03	1.40	1.75
Unwgtd. N	287	287	287	287	287
C-D					
Number	7.2	0.4	6.1	13.9	19.9
SE	2.48	0.21	1.94	1.69	2.79
Unwgtd. N	54	54	54	54	54
Ability (test quartile)					
Low quartile					
Number	10.2	1.3	3.9	18.2	15.5
SE	2.37	0.78	0.59	1.65	1.84
Unwgtd. N	129	129	129	129	129
25-49 percentile					
Number	8.7	3.8	7.0	20.3	20.5
SE	1.29	0.97	1.37	1.09	1.26
Unwgtd. N	334	334	334	334	334
50-75 percentile					
Number	12.3	4.4	7.3	23.1	22.7
SE	0.94	0.56	0.77	0.88	0.87
Unwgtd. N	930	930	930	930	930
High quartile					
Number	12.9	2.5	7.4	29.5	28.4
SE	0.72	0.31	0.45	0.7	0.72
Unwgtd. N	2006	2006	2006	2006	2006

Table 2.9a
Average number of credits taken by students in non-science-oriented academic courses, by high school program, grades, and ability quartile (cont.)

	Business	Education	Fine Arts	Human-ities	Social Science
	Less-than-4-year institutions				
Total					
Number	10.2	0.4	2.7	9.6	7.3
SE	0.58	0.12	0.32	0.33	0.31
Unwgtd. N	1600	1600	1600	1600	1600
High school program					
General					
Number	8.1	0.5	2.4	7.5	6.3
SE	0.89	0.31	0.41	0.56	0.58
Unwgtd. N	360	360	360	360	360
Academic					
Number	9.8	0.3	3.5	11.9	9.7
SE	0.85	0.10	0.55	0.54	0.52
Unwgtd. N	850	850	850	850	850
Vocational					
Number	12.6	0.4	1.6	7.8	4.2
SE	1.25	0.28	0.56	0.55	0.4
Unwgtd. N	386	386	386	386	386

Table 2.9a
Average number of credits taken by students in non-science-oriented academic courses, by high school program, grades, and ability quartile (cont.)

	Business	Education	Fine Arts	Human-ities	Social Science
High school grades					
A					
Number	12.9	0.0	1.1	17.5	10.1
SE	5.26	0.01	0.4	4.97	1.67
Unwgtd. N	38	38	38	38	38
A-B					
Number	11.8	0.7	5.9	13.2	11.1
SE	1.67	0.59	1.71	1.10	0.87
Unwgtd. N	201	201	201	201	201
B					
Number	11	0.3	2.4	10.6	9.0
SE	1.21	0.13	0.38	0.65	0.72
Unwgtd. N	390	390	390	390	390
B-C					
Number	9.8	0.5	2.4	9.4	6.7
SE	0.99	0.26	0.37	0.55	0.52
Unwgtd. N	534	534	534	534	534
C					
Number	10.1	0.2	2.3	7.3	5.1
SE	1.34	0.10	0.78	0.55	0.53
Unwgtd. N	335	335	335	335	335
C-D					
Number	4.2	0.1	0.6	4.4	2.9
SE	1.28	0.09	0.29	0.92	0.65
Unwgtd. N	90	90	90	90	90
Ability (test quartile)					
Low quartile					
Number	9.7	0.6	0.7	7.1	3.7
SE	1.47	0.46	0.17	0.78	0.51
Unwgtd. N	252	252	252	252	252
25-49 percentile					
Number	12.0	0.3	1.7	8.2	5.6
SE	1.27	0.14	0.36	0.54	0.45
Unwgtd. N	396	396	396	396	396
50-75 percentile					
Number	9.5	0.4	4.0	9.7	8.4
SE	0.86	0.23	0.68	0.44	0.56
Unwgtd. N	543	543	543	543	543
High quartile					
Number	9.3	0.3	3.4	13.4	10.5
SE	1.24	0.14	0.91	1.0	0.78
Unwgtd. N	380	380	380	380	380

Table 2.10a
Percentage of students concentrating in occupationally oriented subjects, by selected characteristics

	Non-technically oriented	Technically oriented
Total		
%	15.1	6.9
SE	1.21	0.87
Unwgtd. N	1600	1600
Gender		
Male		
%	15.4	16.0
SE	1.75	1.95
Unwgtd. N	682	682
Female		
%	14.8	0.7
SE	1.67	0.34
Unwgtd. N	918	918
Race/ethnicity		
Hispanic		
%	24.6	8.6
SE	5.12	3.39
Unwgtd. N	253	253
Asian		
%	7.3	3.0
SE	5.23	2.58
Unwgtd. N	50	50
Black		
%	16.3	2.1
SE	3.60	1.04
Unwgtd. N	210	210
White		
%	14.2	7.3
SE	1.37	1.03
Unwgtd. N	1042	1042

Table 2.10a
Percentage of students concentrating in occupationally oriented subjects, by selected characteristics (cont.)

	Non-technically oriented	Technically oriented
Socioeconomic status		
Low quartile		
%	19.9	8.7
SE	3.30	2.04
Unwgtd. N	351	351
25-49 percentile		
%	17.1	7.3
SE	2.37	2.03
Unwgtd. N	412	412
50-75 percentile		
%	14.2	7.2
SE	2.22	1.55
Unwgtd. N	452	452
High quartile		
%	10.1	4.7
SE	1.91	1.62
Unwgtd. N	361	361
High school program		
General		
%	18.1	9.4
SE	2.53	2.27
Unwgtd. N	360	360
Academic		
%	11.4	3.0
SE	1.45	0.82
Unwgtd. N	850	850
Vocational		
%	18.1	11.5
SE	2.63	1.88
Unwgtd. N	386	386

Table 2.10a
Percentage of students concentrating in occupationally oriented subjects, by selected characteristics (cont.)

	Non-technically oriented	Technically oriented
High school grades		
A		
%	10.8	0.0
SE	5.59	0.0
Unwgtd. N	38	38
A-B		
%	4.5	0.4
SE	1.81	0.33
Unwgtd. N	201	201
B		
%	12.4	6.1
SE	2.05	1.39
Unwgtd. N	390	390
B-C		
%	17.5	7.5
SE	2.32	1.47
Unwgtd. N	534	534
C		
%	16.0	9.5
SE	2.83	2.64
Unwgtd. N	35	335
C-D		
%	33.0	14.5
SE	6.97	4.66
Unwgtd. N	90	90
Ability (test quartile)		
Low quartile		
%	24.9	13.5
SE	3.57	3.39
Unwgtd. N	252	252
25-49 percentile		
%	18.5	6.8
SE	2.76	1.61
Unwgtd. N	396	396
50-75 percentile		
%	10.2	6.7
SE	1.51	1.32
Unwgtd. N	543	543
High quartile		
%	11.1	2.1
SE	2.16	0.73
Unwgtd. N	380	380

Table 2.11a
Average number of credits taken by students in occupationally oriented subjects, by selected characteristics

	Non-technically oriented	Technically oriented
Total		
Number	9.1	2.9
SE	0.51	0.41
Unwgtd. N	1600	1600
Gender		
Male		
Number	9.1	6.6
SE	0.79	0.96
Unwgtd. N	682	682
Female		
Number	9.1	0.4
SE	0.69	0.12
Unwgtd. N	918	918
Race/ethnicity		
Hispanic		
Number	12.5	4.8
SE	3.10	1.91
Unwgtd. N	253	253
Asian		
Number	7.4	1.3
SE	1.40	0.62
Unwgtd. N	50	50
Black		
Number	9.4	1.1
SE	1.59	0.45
Unwgtd. N	210	210
White		
Number	8.8	2.9
SE	0.53	0.50
Unwgtd. N	1042	1042

Table 2.11a
Average number of credits taken by students in occupationally oriented subjects, by selected characteristics (cont.)

	Non-technically oriented	Technically oriented
Socioeconomic status		
Low quartile		
Number	11.0	3.6
SE	1.35	0.98
Unwgtd. N	351	351
25-49 percentile		
Number	10.0	2.7
SE	1.27	0.69
Unwgtd. N	412	412
50-75 percentile		
Number	8.1	3.0
SE	0.8	0.75
Unwgtd. N	452	452
High quartile		
Number	8.2	2.4
SE	0.81	1.05
Unwgtd. N	361	361
High school program		
General		
Number	9.4	3.5
SE	1.00	0.80
Unwgtd. N	360	360
Academic		
Number	8.2	1.4
SE	0.61	0.39
Unwgtd. N	850	850
Vocational		
Number	10.3	5.1
SE	1.20	1.09
Unwgtd. N	386	386

Table 2.11a
Average number of credits taken by students in occupationally oriented subjects, by selected characteristics (cont.)

	Non-technically oriented	Technically oriented
High school grades		
A		
Number	9.2	1.2
SE	2.22	0.95
Unwgtd. N	38	38
A-B		
Number	7.1	0.4
SE	0.95	0.18
Unwgtd. N	201	201
B		
Number	8.8	3.1
SE	0.82	0.79
Unwgtd. N	390	390
B-C		
Number	9.7	3.1
SE	0.88	0.71
Unwgtd. N	534	534
C		
Number	8.3	3.5
SE	1.2	1.03
Unwgtd. N	335	335
C-D		
Number	14.1	5.1
SE	4.15	1.69
Unwgtd. N	90	90
Ability (test quartile)		
Low quartile		
Number	11.6	4.6
SE	1.78	1.12
Unwgtd. N	252	252
25-49 percentile		
Number	9.9	2.8
SE	1.11	0.79
Unwgtd. N	396	396
50-75 percentile		
Number	8.1	3.2
SE	0.64	0.77
Unwgtd. N	543	543
High quartile		
Number	7.9	1.3
SE	0.97	0.53
Unwgtd. N	380	380

Table 3.1a
Percentage of students attending 4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender

	High school mathematics pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Total				
Male				
%	26.8	55.9	16.2	1.0
SE	1.75	1.94	1.45	0.35
Unwgtd. N	1470	1470	1470	1470
Female				
%	22.5	56.6	20.1	0.8
SE	1.46	1.69	1.40	0.28
Unwgtd. N	1666	1666	1666	1666
Science-oriented				
Engineering credit pattern				
Male				
%	49.3	45.5	5.1	0.0
SE	6.54	6.46	2.77	0.0
Unwgtd. N	102	102	102	102
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	22	22	22	22
Health sciences credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	10	10	10	10
Female				
%	23.1	72.0	4.6	0.3
SE	6.3	6.36	1.78	0.27
Unwgtd. N	77	77	77	77
Natural sciences credit pattern				
Male				
%	36.1	52.5	10.8	0.6
SE	3.03	3.14	1.91	0.45
Unwgtd. N	500	500	500	500
Female				
%	31.6	59.0	9.3	0.1
SE	3.18	3.46	1.88	0.14
Unwgtd. N	382	382	382	382

Table 3.1a
Percentage of students attending 4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender (cont.)

	High school mathematics pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Non-science-oriented				
Business credit pattern				
Male				
%	21.5	63.7	14.6	0.3
SE	3.94	4.94	4.45	0.26
Unwgtd. N	202	202	202	202
Female				
%	21.7	61.4	16.8	0.2
SE	3.09	4.03	2.99	0.22
Unwgtd. N	251	251	251	251
Education credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	6	6	6	6
Female				
%	12.2	77.1	10.7	0.0
SE	4.71	6.15	4.59	0.0
Unwgtd. N	72	72	72	72
Fine arts credit pattern				
Male				
%	6.8	60.0	33.1	0.0
SE	4.28	9.06	8.74	0.0
Unwgtd. N	46	46	46	46
Female				
%	10.4	61.0	20.7	8.0
SE	4.24	7.22	6.04	4.45
Unwgtd. N	68	68	68	68

Table 3.1a
Percentage of students attending 4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender (cont.)

	High school mathematics pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Humanities credit pattern				
Male				
%	19.4	58.0	20.6	2.0
SE	3.22	4.04	3.48	1.24
Unwgtd. N	273	273	273	273
Female				
%	20.9	47.8	30.6	0.7
Se	2.51	3.19	3.1	0.5
Unwgtd. N	407	407	407	407
Social sciences credit pattern				
Male				
%	23.3	57.0	18.1	1.5
SE	3.67	4.16	3.04	1.04
UNwgtd. N	277	277	277	277
Female				
%	18.8	57.5	23.4	0.3
SE	2.78	3.72	3.46	0.22
Unwgtd. N	339	339	339	339

Table 3.2a
Percentage of students attending less-than-4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender

	High school mathematics pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Total				
Male				
%	8.8	40.2	45.7	5.3
SE	1.39	2.48	2.64	1.65
Unwgtd. N	607	607	607	607
Female				
%	4.5	42.0	48.5	5.0
SE	0.8	2.28	2.38	0.90
Unwgtd. N	815	815	815	815
Science-oriented				
Engineering credit pattern				
Male				
%	13.0	47.9	34.8	4.2
SE	4.47	6.73	6.71	2.54
Unwgtd. N	87	87	87	87
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	9	9	9	9
Health sciences credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	3	3	3	3
Female				
%	3.7	54.6	38.0	3.7
SE	2.35	8.97	8.45	2.58
Unwgtd. N	61	61	61	61
Natural sciences credit pattern				
Male				
%	15.7	59.5	23.7	1.0
SE	3.51	4.88	3.96	0.58
Unwgtd. N	173	173	173	173
Female				
%	8.3	48.3	42.2	1.1
SE	2.29	5.67	6.06	0.87
Unwgtd. N	190	190	190	190

Table 3.2a
Percentage of students attending less-than-4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender (cont.)

	High school mathematics pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Non-science-oriented				
Business credit pattern				
Male				
%	17.1	34.3	45.4	3.2
SE	6.79	8.55	9.80	3.12
Unwgtd. N	48	48	48	48
Female				
%	3.9	34.8	53.2	8.1
SE	1.38	3.69	3.94	2.13
Unwgtd. N	267	267	267	267
Education credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	0	0	0	0
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	3	3	3	3
Fine arts credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	29	29	29	29
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	21	21	21	21

Table 3.2a
Percentage of students attending less-than-4-year institutions with specified high school mathematics pattern, by postsecondary education pattern and gender (cont.)

	High school mathematics pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Humanities credit pattern				
Male				
%	7.5	29.4	57.8	5.3
SE	3.56	7.44	7.16	3.26
Unwgtd. N	67	67	67	67
Female				
%	3.0	50.0	44.2	2.8
Se	2.05	6.42	6.38	1.91
Unwgtd. N	115	115	115	115
Social sciences credit pattern				
Male				
%	4.2	45.0	47.4	3.3
SE	3.31	8.93	9.06	3.28
Unwgtd. N	43	43	43	43
Female				
%	11.9	49.7	36.2	2.2
SE	5.41	8.29	7.79	1.22
Unwgtd. N	60	60	60	60
Non-technical occupational credit pattern				
Male				
%	2.5	30.5	61.2	5.8
SE	2.04	5.80	6.34	2.71
Unwgtd. N	91	91	91	91
Female				
%	0.3	25.4	65.4	8.9
SE	0.33	5.25	6.33	3.17
Unwgtd. N	103	103	103	103
Technical occupational credit pattern				
Male				
%	0.6	21.9	62.0	15.5
SE	0.59	5.22	7.44	7.78
Unwgtd. N	80	80	80	80
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	5	5	5	5

Table 3.3a
Percentage of students attending 4-year institutions with specified high school science pattern, by postsecondary education pattern and gender

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Total				
Male				
%	32.7	39.6	24.3	3.4
SE	1.68	1.82	1.69	0.73
Unwgtd. N	1470	1470	1470	1470
Female				
%	17.6	48.2	29.7	4.6
SE	1.23	1.78	1.63	0.70
Unwgtd. N	1666	1666	1666	1666
Science-oriented				
Engineering credit pattern				
Male				
%	62.1	30.4	3.7	3.9
SE	6.3	5.87	2.13	2.66
Unwgtd. N	102	102	102	102
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	22	22	22	22
Health sciences credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	10	10	10	10
Female				
%	23.3	65.5	11.0	0.3
SE	6.08	6.83	4.32	0.27
Unwgtd. N	77	77	77	77
Natural sciences credit pattern				
Male				
%	49.0	35.5	13.7	1.8
SE	2.98	2.88	2.15	0.76
Unwgtd. N	500	500	500	500
Female				
%	30.4	51.0	17.0	1.7
SE	3.18	3.53	2.45	0.83
Unwgtd. N	382	382	382	382

Table 3.3a
Percentage of students attending 4-year institutions with specified high school science pattern, by postsecondary education pattern and gender (cont.)

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Non-science-oriented				
Business credit pattern				
Male				
%	17.2	52.2	28.1	2.6
SE	3.07	4.85	4.69	2.47
Unwgtd. N	202	202	202	202
Female				
%	12.2	49.0	36.5	2.2
SE	2.45	3.91	4.00	0.94
Unwgtd. N	251	251	251	251
Education credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	6	6	6	6
Female				
%	10.1	51.3	33.1	5.5
SE	4.43	7.41	6.89	3.79
Unwgtd. N	72	72	72	72
Fine arts credit pattern				
Male				
%	8.5	48.4	40.7	2.4
SE	4.54	9.17	9.27	1.74
Unwgtd. N	46	46	46	46
Female				
%	9.8	45.7	32.3	12.1
SE	4.2	7.71	7.05	4.95
Unwgtd. N	68	68	68	68

Table 3.3a
Percentage of students attending 4-year institutions with specified high school science pattern, by postsecondary education pattern and gender (cont.)

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Humanities credit pattern				
Male				
%	20.3	42.9	31.1	5.7
SE	3.19	3.84	3.68	1.94
Unwgtd. N	273	273	273	273
Female				
%	13.0	42.8	36.0	8.2
SE	2.09	3.29	3.34	1.83
Unwgtd. N	407	407	407	407
Social sciences credit pattern				
Male				
%	27.6	37.6	29.2	5.6
SE	3.33	3.51	3.57	1.90
Unwgtd. N	277	277	277	277
Female				
%	14.3	51.8	28.2	5.6
SE	2.4	3.79	3.23	1.93
Unwgtd. N	339	339	339	339

Table 3.4a
Percentage of students attending less-than-4-year institutions with specified high school science pattern, by postsecondary education pattern and gender

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Total				
Male				
%	10.7	26.9	52.0	10.4
SE	1.58	2.21	2.67	1.62
Unwgtd. N	607	607	607	607
Female				
%	5.4	30.9	50.1	13.6
SE	1.24	2.20	2.39	1.68
Unwgtd. N	815	815	815	815
Science-oriented				
Engineering credit pattern				
Male				
%	16.3	24.9	48.6	10.2
SE	5.34	5.97	7.45	4.37
Unwgtd. N	87	87	87	87
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	9	9	9	9
Health sciences credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	3	3	3	3
Female				
%	17.0	27.8	46.6	8.5
SE	8.7	6.71	8.53	4.65
Unwgtd. N	61	61	61	61
Natural sciences credit pattern				
Male				
%	19.6	40.0	35.7	4.6
SE	4.14	4.52	4.58	2.12
Unwgtd. N	173	173	173	173
Female				
%	8.9	31.4	48.7	11.0
SE	2.49	4.54	5.61	3.61
Unwgtd. N	190	190	190	190

Table 3.4a
Percentage of students attending less-than-4-year institutions with specified high school science pattern, by postsecondary education pattern and gender (cont.)

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Non-science-oriented				
Business credit pattern				
Male				
%	6.7	37.5	49.3	6.4
SE	4.71	8.89	8.22	4.18
Unwgtd. N	48	48	48	48
Female				
%	0.7	26.7	59.9	12.7
SE	0.4	3.52	3.88	2.8
Unwgtd. N	267	267	267	267
Education credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	0	0	0	0
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	3	3	3	3
Fine arts credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	29	29	29	29
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	21	21	21	21

Table 3.4a
Percentage of students attending less-than-4-year institutions with specified high school science pattern, by postsecondary education pattern and gender (cont.)

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/non-participant
Humanities credit pattern				
Male				
%	3.2	18.1	65.3	13.5
SE	2.19	4.36	6.28	5.22
Unwgtd. N	67	67	67	67
Female				
%	3.9	34.3	48.1	13.7
SE	2.28	5.77	6.58	4.23
Unwgtd. N	115	115	115	115
Social sciences credit pattern				
Male				
%	15.7	26.8	46.4	11.1
SE	6.11	7.94	9.11	6.13
Unwgtd. N	43	43	43	43
Female				
%	12.7	42.0	34.7	10.6
SE	5.71	8.39	7.15	6.28
Unwgtd. N	60	60	60	60
Non-technical occupational credit pattern				
Male				
%	4.4	20.1	57.4	18.1
SE	2.67	5.37	6.89	5.08
Unwgtd. N	91	91	91	91
Female				
%	1.0	27.2	49.0	22.8
SE	0.77	5.82	6.29	5.79
Unwgtd. N	103	103	103	103
Technical occupational credit pattern				
Male				
%	1.5	12.2	73.6	12.6
SE	1.52	3.81	5.66	4.36
Unwgtd. N	80	80	80	80
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	5	5	5	5

Table 3.5a
Percentage of students attending 4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Total			
Male			
%	41.5	30.7	27.8
SE	2.04	1.70	1.72
Unwgtd. N	1470	1470	1470
Female			
%	46.6	29.2	24.2
SE	1.87	1.61	1.57
Unwgtd. N	1666	1666	1666
Science-oriented			
Engineering credit pattern			
Male			
%	32.5	36.7	30.8
SE	5.82	5.98	6.06
Unwgtd. N	102	102	102
Female			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	22	22	22
Health sciences credit pattern			
Male			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	10	10	10
Female			
%	38.8	33.7	27.4
SE	7.11	7.14	6.38
Unwgtd. N	77	77	77
Natural sciences credit pattern			
Male			
%	31.5	32.8	35.8
SE	2.69	2.77	2.98
Unwgtd. N	500	500	500
Female			
%	39.0	37.2	23.8
SE	3.40	3.38	2.88
Unwgtd. N	382	382	382

Table 3.5a
Percentage of students attending 4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender (cont.)

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Non-science-oriented			
Business credit pattern			
Male			
%	45.1	27.1	27.8
SE	4.54	4.41	3.87
Unwgtd. N	202	202	202
Female			
%	40.4	25.4	34.2
SE	4.04	3.66	4.08
Unwgtd. N	251	251	251
Education credit pattern			
Male			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	6	6	6
Female			
%	48.1	27.5	24.4
SE	7.31	6.50	6.43
Unwgtd. N	72	72	72
Fine arts credit pattern			
Male			
%	33.0	38.1	28.9
SE	8.48	9.07	7.85
Unwgtd. N	46	46	46
Female			
%	32.5	42.9	24.6
SE	6.80	7.69	6.62
Unwgtd. N	68	68	68

Table 3.5a
Percentage of students attending 4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender (cont.)

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Humanities credit pattern			
Male			
%	53.1	27.6	19.4
SE	4.23	3.76	3.13
Unwgtd. N	273	273	273
Female			
%	56.6	22.4	21.0
SE	3.28	2.90	2.75
Unwgtd. N	407	407	407
Social sciences credit pattern			
Male			
%	53.9	25.9	20.3
SE	4.15	3.35	3.46
Unwgtd. N	277	277	277
Female			
%	61.0	22.2	16.8
SE	3.67	3.01	2.63
Unwgtd. N	339	339	339

Table 3.6a
Percentage of students attending less-than-4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Total			
Male			
%	24.0	29.5	46.5
SE	2.24	2.34	2.70
Unwgtd. N	607	607	607
Female			
%	31.0	31.3	37.8
SE	2.18	2.11	2.33
Unwgtd. N	815	815	815
Science-oriented			
Engineering credit pattern			
Male			
%	27.6	35.5	36.9
SE	5.29	6.04	6.18
Unwgtd. N	87	87	87
Female			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	9	9	9
Health sciences credit pattern			
Male			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	3	3	3
Female			
%	46.1	27.6	26.3
SE	8.14	8.44	6.93
Unwgtd. N	61	61	61
Natural sciences credit pattern			
Male			
%	20.6	34.8	44.7
SE	3.95	4.82	4.97
Unwgtd. N	173	173	173
Female			
%	29.7	34.2	36.1
SE	4.35	4.50	4.65
Unwgtd. N	190	190	190

Table 3.6a
Percentage of students attending less-than-4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender (cont.)

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Non-science-oriented			
Business credit pattern			
Male			
%	27.5	38.3	34.2
SE	7.57	8.19	7.79
Unwgtd. N	48	48	48
Female			
%	26.4	31.2	42.3
SE	3.30	3.68	4.03
Unwgtd. N	267	267	267
Education credit pattern			
Male			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	0	0	0
Female			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	3	3	3
Fine arts credit pattern			
Male			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	29	29	29
Female			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	21	21	21

Table 3.6a
Percentage of students attending less-than-4-year institutions with specified high school humanities pattern, by postsecondary education pattern and gender (cont.)

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Humanities credit pattern			
Male			
%	36.3	16.8	46.8
SE	8.33	5.09	8.77
Unwgtd. N	67	67	67
Female			
%	38.9	24.0	37.1
SE	6.45	4.97	6.33
Unwgtd. N	115	115	115
Social sciences credit pattern			
Male			
%	36.6	26.8	36.6
SE	8.88	7.93	9.09
Unwgtd. N	43	43	43
Female			
%	44.8	33.3	21.9
SE	7.95	8.05	7.67
Unwgtd. N	60	60	60
Non-technical occupational credit pattern			
Male			
%	20.5	22.7	56.8
SE	4.85	5.34	6.26
Unwgtd. N	91	91	91
Female			
%	21.9	30.1	48.0
SE	5.13	5.49	6.26
Unwgtd. N	103	103	103
Technical occupational credit pattern			
Male			
%	15.3	27.4	57.4
SE	4.27	5.50	6.79
Unwgtd. N	80	80	80
Female			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	5	5	5

Table 3.7a
Percentage of students attending 4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Nonparticipant
Total				
Male				
%	8.2	15.4	66.9	9.5
SE	1.12	1.33	1.82	1.32
Unwgtd. N	1470	1470	1470	1470
Female				
%	12.7	13.3	65.6	8.4
SE	1.12	1.12	1.79	1.21
Unwgtd. N	1666	1666	1666	1666
Science-oriented				
Engineering credit pattern				
Male				
%	11.4	17.3	63.5	7.8
SE	4.22	4.84	6.21	3.33
Unwgtd. N	102	102	102	102
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	22	22	22	22
Health sciences credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	10	10	10	10
Female				
%	21.1	8.8	64.4	5.7
SE	5.74	3.81	6.64	3.36
Unwgtd. N	77	77	77	77
Natural sciences credit pattern				
Male				
%	5.2	15.7	70.5	8.6
SE	1.29	2.16	2.81	1.69
Unwgtd. N	500	500	500	500
Female				
%	9.4	14.7	66.6	9.3
SE	1.91	2.55	3.17	1.96
Unwgtd. N	382	382	382	382

Table 3.7a
Percentage of students attending 4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender (cont.)

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Nonparticipant
Non-science-oriented				
Business credit pattern				
Male				
%	15.4	21.1	54.9	8.6
SE	3.99	4.04	4.92	3.48
Unwgtd. N	202	202	202	202
Female				
%	25.8	13.4	55.4	5.5
SE	3.46	2.74	4.03	1.74
Unwgtd. N	251	251	251	251
Education credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	6	6	6	6
Female				
%	6.6	18.1	74.6	0.6
SE	3.66	5.73	6.30	0.61
Unwgtd. N	72	72	72	72
Fine arts credit pattern				
Male				
%	1.3	10.1	76.6	12.0
SE	1.07	5.95	7.93	6.04
Unwgtd. N	46	46	46	46
Female				
%	0.0	6.6	85.7	7.6
SE	0.0	3.46	5.3	4.25
Unwgtd. N	68	68	68	68

Table 3.7a
Percentage of students attending 4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender (cont.)

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Nonparticipant
Humanities credit pattern				
Male				
%	6.1	11.1	69.8	13.1
SE	1.93	2.88	4.08	3.00
Unwgtd. N	273	273	273	273
Female				
%	10.8	12.2	65.6	11.4
SE	2.00	2.07	3.33	2.63
Unwgtd. N	407	407	407	407
Social sciences credit pattern				
Male				
%	5.0	13.7	71.1	10.3
SE	1.77	3.0	3.73	2.67
Unwgtd. N	277	277	277	277
Female				
%	8.2	12.4	67.7	11.7
SE	2.07	2.33	3.78	2.67
Unwgtd. N	339	339	339	339

Table 3.8a
Percentage of students attending less-than-4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Nonparticipant
Total				
Male				
%	23.6	24.1	48.3	3.9
SE	2.49	2.25	2.91	1.10
Unwgtd. N	607	607	607	607
Female				
%	27.2	30.0	40.6	2.2
SE	2.30	2.38	2.38	0.63
Unwgtd. N	815	815	815	815
Science-oriented				
Engineering credit pattern				
Male				
%	28.0	23.8	42.0	6.2
SE	6.63	5.28	6.61	3.25
Unwgtd. N	87	87	87	87
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	9	9	9	9
Health sciences credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	3	3	3	3
Female				
%	21.9	24.8	53.2	0.0
SE	6.20	8.40	9.26	0.0
Unwgtd. N	61	61	61	61
Natural sciences credit pattern				
Male				
%	12.2	30.0	54.2	3.7
SE	3.11	4.85	5.22	1.91
Unwgtd. N	173	173	173	173
Female				
%	24.7	29.8	43.3	2.2
SE	5.00	5.83	5.28	1.15
Unwgtd. N	190	190	190	190

Table 3.8a
Percentage of students attending less-than-4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender (cont.)

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Humanities credit pattern				
Male				
%	16.4	18.1	57.9	7.6
SE	6.31	6.21	8.55	3.99
Unwgtd. N	67	67	67	67
Female				
%	18.0	32.3	47.3	2.3
SE	4.39	6.24	6.11	1.84
Unwgtd. N	115	115	115	115
Social sciences credit pattern				
Male				
%	18.0	18.5	62.3	1.2
SE	7.66	7.41	9.24	1.18
UNwgtd. N	43	43	43	43
Female				
%	8.5	34.0	52.6	4.9
SE	4.06	8.46	8.74	3.43
Unwgtd. N	60	60	60	60
Non-technical occupational credit pattern				
Male				
%	27.1	30.1	40.9	1.9
SE	6.56	6.05	6.75	1.86
Unwgtd. N	91	91	91	91
Female				
%	20.3	39.8	36.5	3.4
SE	5.03	6.17	6.31	2.10
Unwgtd. N	103	103	103	103
Technical occupational credit pattern				
Male				
%	50.7	25.4	20.0	3.9
SE	7.51	5.92	5.37	3.77
Unwgtd. N	80	80	80	80
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	5	5	5	5

Table 3.8a
Percentage of students attending less-than-4-year institutions with specified high school vocational pattern, by postsecondary education pattern and gender (cont.)

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Non-science-oriented				
Business credit pattern				
Male				
%	12.3	21.3	62.5	3.9
SE	5.30	6.50	7.89	3.78
Unwgtd. N	48	48	48	48
Female				
%	44.3	25.5	29.6	0.6
SE	4.10	3.30	3.53	0.5
Unwgtd. N	267	267	267	267
Education credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	0	0	0	0
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	3	3	3	3
Fine arts credit pattern				
Male				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	29	29	29	29
Female				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	21	21	21	21

Data for Figure 1.1
Percentage of postsecondary students with specified high school mathematics patterns, by gender, race/ethnicity, and socioeconomic status

	High school math pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
%	17.1	51.2	29.2	2.5
SE	0.86	1.07	1.04	0.38
Unwtd. N	4905	4905	4905	4905
Gender				
Male				
%	19.9	51.4	26.3	2.4
SE	1.23	1.53	1.38	0.58
Unwtd. N	2246	2246	2246	2246
Female				
%	14.9	51.0	31.5	2.6
SE	0.98	1.37	1.39	0.44
Unwtd. N	2659	2659	2659	2659
Race/ethnicity				
Hispanic				
%	10.5	39.0	42.3	8.3
SE	1.73	3.74	3.89	2.49
Unwtd. N	599	599	599	599
Asian				
%	29.9	52.7	14.3	3.1
SE	3.58	3.94	2.78	2.09
Unwtd. N	232	232	232	232
Black				
%	6.1	38.1	53.9	1.9
SE	1.11	3.32	3.46	0.93
Unwtd. N	651	651	651	651
White				
%	18.8	53.7	25.3	2.2
SE	0.98	1.18	1.09	0.40
Unwtd. N	3341	3341	3341	3341

Data for Figure 1.1
Percentage of postsecondary students with specified high school mathematics patterns, by gender, race/ethnicity, and socioeconomic status (cont.)

	High school math pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Socioeconomic status				
Low quartile				
%	7.0	38.0	50.9	4.1
SE	1.08	2.70	2.87	1.16
Unwtd. N	734	734	734	734
25-49 percentile				
%	12.0	48.4	35.7	3.9
SE	1.42	2.28	2.16	1.15
Unwtd. N	914	914	914	914
50-75 percentile				
%	16.3	52.0	28.7	3.0
SE	1.40	1.90	1.77	0.71
Unwtd. N	1312	1312	1312	1312
High quartile				
%	23.3	56.3	19.3	1.0
SE	1.49	1.63	1.35	0.30
Unwdt. N	1928	1928	1928	1928

Data for Figure 1.2
Percentage of postsecondary students with specified high school science patterns, by gender, race/ethnicity, and socioeconomic status

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
%	17.7	38.8	36.5	7.0
SE	0.75	1.04	1.1	0.59
Unwtd. N	4905			
Gender				
Male				
%	24.3	36.2	33.7	5.9
SE	1.23	1.45	1.52	0.71
Unwtd. N	2246			
Female				
%	12.5	40.9	38.7	7.9
SE	0.88	1.36	1.4	0.78
Unwtd. N	2659			
Race/ethnicity				
Hispanic				
%	9.7	25.3	48.2	16.8
SE	1.59	2.93	3.97	3.52
Unwtd. N	599			
Asian				
%	40.2	33.7	19.6	6.6
SE	4.58	3.76	3.58	2.36
Unwtd. N	232			
Black				
%	5.8	32.1	52.2	9.8
SE	1.19	2.86	3.13	2.05
Unwtd. N	651			
White				
%	19.3	40.6	34.1	6.0
SE	0.87	1.16	1.2	0.6
Unwtd. N	3341			

Data for Figure 1.2
Percentage of postsecondary students with specified high school science patterns, by gender, race/ethnicity, and socioeconomic status (cont.)

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Socioeconomic status				
Low quartile				
%	6.9	26.3	52.8	14.0
SE	0.97	2.26	2.87	2.24
Unwtd. N	734			
25-49 percentile				
%	13.2	35.3	43.4	8.0
SE	1.44	2.25	2.36	1.22
Unwtd. N	914			
50-75 percentile				
%	16.7	38.6	38.2	6.5
SE	1.31	1.79	1.93	0.96
Unwtd. N	1312			
High quartile				
%	24.0	44.7	26.9	4.5
SE	1.33	1.56	1.56	0.64
Unwtd. N	1928			

Data for Figure 1.3
Percentage of postsecondary students with specified high school computer science patterns, by gender, race/ethnicity, and socioeconomic status

	High school computer science pattern	
	Participant	Non-participant
Total		
%	17.6	82.4
SE	0.8	0.8
Unwtd. N	4977	
Gender		
Male		
%	20.8	79.2
SE	1.18	1.18
Unwtd. N	2280	
Female		
%	15.1	84.9
SE	0.96	0.96
Unwtd. N	2697	
Race/ethnicity		
Hispanic		
%	13.7	86.3
SE	2.55	2.55
Unwtd. N	605	
Asian		
%	21.8	78.2
SE	3.28	3.28
Unwtd. N	234	
Black		
%	14.1	85.9
SE	2.12	2.12
Unwtd. N	663	
White		
%	18.3	81.7
SE	0.91	0.91
Unwtd. N	3391	

Data for Figure 1.3
Percentage of postsecondary students with specified high school computer science patterns, by gender, race/ethnicity, and socioeconomic status (cont.)

	High school computer science pattern	
	Participant	Non-participant
Socioeconomic status		
Low quartile		
%	13.2	86.8
SE	1.77	1.77
Unwtd. N	746	
25-49 percentile		
%	16.7	83.3
SE	1.62	1.62
Unwtd. N	929	
50-75 percentile		
%	16.8	83.2
SE	1.31	1.31
Unwtd. N	1331	
High quartile		
%	20.1	79.9
SE	1.26	1.26
Unwtd. N	1944	

Data for Figure 1.4
Percentage of postsecondary students with specified high school humanities patterns, by gender, race/ethnicity, and socioeconomic status

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Total			
%	37.8	30.4	31.8
SE	1.22	0.95	1.13
Unwtd. N	4977		
Gender			
Male			
%	35.0	30.9	34.1
SE	1.57	1.3	1.56
Unwtd. N	2280		
Female			
%	40.1	29.9	30.0
SE	1.51	1.25	1.4
Unwtd. N	2697		
Race/ethnicity			
Hispanic			
%	33.0	27.5	39.5
SE	3.31	3.16	4.21
Unwtd. N	605		
Asian			
%	42.6	29.4	28.0
SE	3.86	3.25	3.87
Unwtd. N	234		
Black			
%	25.5	31.6	42.9
SE	2.73	3.17	3.38
Unwtd. N	663		
White			
%	39.6	30.5	30.0
SE	1.36	1.07	1.23
Unwtd. N	3391		

Data for Figure 1.4
Percentage of postsecondary students with specified high school humanities patterns, by gender, race/ethnicity, and socioeconomic status (cont.)

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Socioeconomic status			
Low quartile			
%	22.8	29.5	47.7
SE	2.49	2.69	3.06
Unwtd. N	746		
25-49 percentile			
%	32.6	30.9	36.4
SE	2.15	2.05	2.21
Unwtd. N	929		
50-75 percentile			
%	36.7	33.0	30.3
SE	1.88	1.70	1.78
Unwtd. N	1331		
High quartile			
%	46.2	28.8	24.9
SE	1.89	1.43	1.54
Unwtd. N	1944		

Data for Figure 1.5
Percentage of postsecondary students with specified high school vocational patterns, by gender, race/ethnicity, and socioeconomic status

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Total				
%	16.1	19.8	57.6	6.4
SE	0.87	0.86	1.15	0.69
Unwtd. N	4905			
Gender				
Male				
%	13.3	19.0	60.4	7.2
SE	1.17	1.21	1.59	0.92
Unwtd. N	2246			
Female				
%	18.4	20.4	55.4	5.8
SE	1.16	1.21	1.52	0.79
Unwtd. N	2659			
Race/ethnicity				
Hispanic				
%	21.6	21.0	50.3	7.1
SE	3.98	2.88	3.91	2.29
Unwtd. N	599			
Asian				
%	6.8	14.6	68.1	10.4
SE	1.77	2.84	3.83	2.59
Unwtd. N	232			
Black				
%	23.8	28.8	44.7	2.7
SE	2.91	3.08	3.38	0.73
Unwtd. N	651			
White				
%	14.9	18.7	59.5	6.9
SE	0.92	0.91	1.26	0.78
Unwtd. N	3341			

Data for Figure 1.5
Percentage of postsecondary students with specified high school vocational patterns, by gender, race/ethnicity, and socioeconomic status (cont.)

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Socioeconomic status				
Low quartile				
%	36.5	25.2	36.0	2.4
SE	3.16	2.89	2.78	0.68
Unwtd. N	734			
25-49 percentile				
%	24.0	24.2	48.8	3.0
SE	2.04	1.86	2.23	0.63
Unwtd. N	914			
50-75 percentile				
%	14.8	22.9	56.4	6.0
SE	1.3	1.59	1.81	0.86
Unwtd. N	1312			
High quartile				
%	7.0	13.8	69.5	9.7
SE	0.87	1.14	1.71	1.35
Unwtd. N	1928			

Data for Figure 2.1
Percentage of students spending various amounts of time in postsecondary education, by institution type of first enrollment

	Institution type	
	Less-than-4-year	4-year
46 months or more		
%	9.2	41.0
SE	0.89	
Unwgtd. N	1557	3825
34 to 45 months		
%	8.6	34.0
SE	0.90	
Unwgtd. N	1557	3825
22 to 33 months		
%	15.1	7.0
SE	1.24	
Unwgtd. N	1557	3825
10 to 21 months		
%	25.1	7.0
SE	1.48	
Unwgtd. N	1557	3825
Less than 9 months		
%	42.0	10.0
SE	1.62	
Unwgtd. N	1557	3825

Data for Figure 2.2
Average number of postsecondary credits taken by those who first enroll in less-than-4-year institutions 4 years after high school graduation, by sex, race/ethnicity, and socioeconomic status

Total	
Number	61.0
SE	.38
Unwgtd. N	1600
Gender	
Male	
Number	64.9
SE	.63
Unwgtd. N	682
Female	
Number	58.6
SE	.43
Unwgtd. N	918
Race/ethnicity	
Hispanic	
Number	56.1
SE	1.20
Unwgtd. N	253
Asian	
Number	67.8
SE	1.73
Unwgtd. N	50
Black	
Number	55.6
SE	1.00
Unwgtd. N	210
White	
Number	62.4
SE	.44
Unwgtd. N	1042

Data for Figure 2.2
Average number of postsecondary credits taken by those who first enroll in less-than-4-year institutions 4 years after high school graduation, by sex, race/ethnicity, and socioeconomic status (cont.)

Socioeconomic status	
Low	
Number	55.4
SE	.81
Unwgtd. N	351
25 to 49 percentile	
Number	61.1
SE	.72
Unwgtd. N	412
50 to 75 percentile	
Number	58.8
SE	.66
Unwgtd. N	452
High	
Number	69.5
SE	.88
Unwgtd. N	361

Data for Figure 2.3
Average number of postsecondary credits taken by those who first enroll in less-than-4-year institutions 4 years after high school graduation, by high school type, program, urbanicity, and ability levels

Total	
Number	61.0
SE	0.38
Unwgtd. N	1600
High school type	
Public	
Number	60.7
SE	0.41
Unwgtd. N	1237
Catholic	
Number	65.0
SE	0.92
Unwgtd. N	335
Other private	
Number	low n
SE	low n
Unwgtd. N	28
High school urbanicity	
Urban	
Number	59.6
SE	0.90
Unwgtd. N	335
Rural	
Number	60
SE	0.67
Unwgtd. N	415
Suburban	
Number	62.3
SE	0.52
Unwgtd. N	850
High school program	
General	
Number	51.1
SE	0.67
Unwgtd. N	360
Academic	
Number	68
SE	0.55
Unwged. N.	850
Vocational	
Number	58.3
SE	0.78
Unwgtd.	386

Data for Figure 2.3
Average number of postsecondary credits taken by those who first enroll in less-than-4-year institutions 4 years after high school graduation, by high school type, program, urbanicity, and ability levels (cont.)

Ability level	
Low	
Number	51.4
SE	0.93
Unwgtd. N	252
25 to 49 percentile	
Number	56.7
SE	0.68
Unwgtd. N	396
50 to 75 percentile	
Number	61.2
SE	0.59
Unwgtd. N	543
High	
Number	73.5
SE	0.92
Unwgtd. N	380

Data for Figure 2.4
Average number of postsecondary credits taken in 4-year institutions 4 years after high school graduation, by sex, race/ethnicity, and socioeconomic status

Total	
Number	111.9
SE	0.44
Unwgtd. N	3435
Gender	
Male	
Number	113.7
SE	0.62
Unwgtd. N	1605
Female	
Number	110.4
SE	0.57
Unwgtd. N	1830
Race/ethnicity	
Hispanic	
Number	96.9
SE	1.43
Unwgtd. N	358
Asian	
Number	143.2
SE	2.40
Unwgtd. N	178
Black	
Number	86.5
SE	0.94
Unwgtd. N	501
White	
Number	114.6
SE	0.50
Unwgtd. N	2352

Data for Figure 2.4
Average number of postsecondary credits taken in 4-year institutions 4 years after high school graduation, by sex, race/ethnicity, and socioeconomic status (cont.)

Socioeconomic status	
Low	
Number	85.0
SE	0.96
Unwgtd. N	425
25 to 49 percentile	
Number	99.9
SE	1.02
Unwgtd. N	532
50 to 75 percentile	
Number	111.0
SE	0.86
Unwgtd. N	870
High	
Number	120.7
SE	0.63
Unwgtd. N	1602

Data for Figure 2.5
Average number of postsecondary credits taken in 4-year institutions 4 years after high school graduation, by high school type, program, urbanicity, and ability levels

Total	
Number	111.9
SE	0.44
Unwgtd. N	3435
High school type	
Public	
Number	111.1
SE	0.50
Unwgtd. N	2173
Catholic	
Number	116.4
SE	0.84
Unwgtd. N	1053
Other private	
Number	114.2
SE	1.63
Unwgtd. N	209
High school urbanicity	
Urban	
Number	102.6
SE	0.98
Unwgtd. N	707
Rural	
Number	110.4
SE	0.85
Unwgtd. N	761
Suburban	
Number	116.0
SE	0.60
Unwgtd. N	1967
High school program	
General	
Number	98.4
SE	1.07
Unwgtd. N	391
Academic	
Number	117.2
SE	0.50
Unwgtd. N	2842
Vocational	
Number	77.9
SE	1.33
Unwgtd. N	198

Data for Figure 2.5
Average number of postsecondary credits taken in 4-year institutions 4 years after high school graduation, by high school type, program, urbanicity, and ability levels (cont.)

Ability level	
Low	
Number	73.7
SE	1.56
Unwgtd. N	129
25 to 49 percentile	
Number	86.1
SE	1.10
Unwgtd. N	334
50 to 75 percentile	
Number	100.3
SE	0.78
Unwgtd. N	930
High	
Number	123.8
SE	0.59
Unwgtd. N	2006

Data for Figure 3.1
Percentage of students attending 4-year institutions with specified high school mathematics pattern, by postsecondary course pattern

	High school math pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
%	24.5	56.3	18.3	0.9
SE	1.27	1.39	1.10	0.22
Unwgtd. N	3136	3136	3136	3136
Engineering credit pattern				
%	49.6	44.4	6.0	0.0
SE	6.01	5.94	2.78	0.0
Unwgtd. N	124	124	124	124
Health sciences credit pattern				
%	25.5	69.8	4.5	0.2
SE	6.01	6.05	1.64	0.24
Unwgtd. N	87	87	87	87
Natural sciences credit pattern				
%	34.0	55.5	10.1	0.4
SE	2.24	2.36	1.36	0.25
Unwgtd. N	882	882	882	882
Business credit pattern				
%	21.6	62.4	15.7	0.2
SE	2.53	3.17	2.6	0.17
Unwgtd. N	453	453	453	453
Education credit pattern				
%	11.2	74.3	14.5	0.0
SE	4.39	6.15	5.14	0.0
Unwgtd. N	78	78	78	78
Fine arts credit pattern				
%	9.0	60.6	25.4	5.0
SE	3.15	5.82	5.27	2.81
Unwgtd. N	114	114	114	114
Humanities credit pattern				
%	20.3	51.5	26.9	1.2
SE	2.01	2.61	2.52	0.57
Unwgtd. N	680	680	680	680
Social sciences credit pattern				
%	20.9	57.3	21.0	0.9
SE	2.51	2.91	2.50	0.49
Unwgtd. N	616	616	616	616

Data for Figure 3.2
Percentage of students attending less-than-4-year institutions with specified high school mathematics pattern, by postsecondary course pattern

	High school math pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
%	6.2	41.4	47.4	5.1
SE	0.72	1.69	1.81	0.87
Unwgtd. N	1422	1422	1422	1422
Engineering credit pattern				
%	11.7	47.1	37.7	3.6
SE	3.82	6.23	6.32	2.17
Unwgtd. N	96	96	96	96
Health sciences credit pattern				
%	4.1	55.3	37.0	3.6
SE	2.34	8.72	8.20	2.50
Unwgtd. N	64	64	64	64
Natural sciences credit pattern				
%	11.4	53.5	34.0	1.1
SE	2.03	4.09	4.15	0.55
Unwgtd. N	363	363	363	363
Business credit pattern				
%	5.8	34.7	52.1	7.4
SE	1.53	3.28	3.54	1.87
Unwgtd. N	315	315	315	315
Education credit pattern				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	3	3	3	3
Fine arts credit pattern				
%	3.0	49.5	47.6	0.0
SE	2.93	10.07	9.92	0.0
Unwgtd. N	50	50	50	50
Humanities credit pattern				
%	4.6	42.4	49.2	3.7
SE	1.88	5.14	4.96	1.70
Unwgtd. N	182	182	182	182
Social sciences credit pattern				
%	8.8	47.8	40.8	2.6
SE	3.39	6.38	5.87	1.54
Unwgtd. N	103	103	103	103

Data for Figure 3.2
Percentage of students attending less-than-4-year institutions with specified high school mathematics pattern, by postsecondary course pattern (cont.)

	High school math pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Non-technical occupational credit pattern				
%	1.2	27.2	64.1	7.60
SE	0.85	3.94	4.62	2.2
Unwgtd. N	194	194	194	194
Technical occupational credit pattern				
%	0.6	22.4	62.5	14.6
SE	0.56	5.02	7.09	7.38
Unwgtd. N	85	85	85	85

Data for Figure 3.3
Percentage of students attending 4-year institutions with specified high school science pattern, by postsecondary course pattern

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
%	24.5	44.3	27.2	4.0
SE	1.06	1.31	1.31	0.56
Unwgtd. N	3136	3136	3136	3136
Engineering credit pattern				
%	61.6	31.8	3.2	3.4
SE	5.81	5.51	1.87	2.35
Unwgtd. N	124	124	124	124
Health sciences credit pattern				
%	28.4	59.1	12.3	0.2
SE	5.98	6.58	4.32	0.24
Unwgtd. N	87	87	87	87
Natural sciences credit pattern				
%	40.5	42.6	15.2	1.7
SE	2.17	2.25	1.60	0.56
Unwgtd. N	882	882	882	882
Business credit pattern				
%	14.6	50.5	32.5	2.4
SE	1.90	3.10	3.06	1.28
Unwgtd. N	453	453	453	453
Education credit pattern				
%	10.1	54.6	30.3	5.0
SE	4.16	7.29	6.54	3.48
Unwgtd. N	78	78	78	78
Fine arts credit pattern				
%	9.3	46.7	35.5	8.4
SE	3.14	5.84	5.56	3.23
Unwgtd. N	114	114	114	114
Humanities credit pattern				
%	15.7	42.8	34.2	7.3
SE	1.76	2.58	2.59	1.38
Unwgtd. N	680	680	680	680
Social sciences credit pattern				
%	20.4	45.3	28.7	5.6
SE	1.96	2.63	2.54	1.43
Unwgtd. N	616	616	616	616

Data for Figure 3.4
Percentage of students attending less-than-4-year institutions with specified high school science pattern, by postsecondary course pattern

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Total				
%	7.6	29.3	50.8	12.3
SE	0.96	1.65	1.87	1.25
Unwgtd. N	1422	1422	1422	1422
Engineering credit pattern				
%	15.5	26.4	49.1	9.0
SE	4.73	5.57	6.81	3.76
Unwgtd. N	96	96	96	96
Health sciences credit pattern				
%	17.0	29.6	45.2	8.2
SE	8.45	6.72	8.34	4.50
Unwgtd. N	64	64	64	64
Natural sciences credit pattern				
%	14.0	35.0	42.8	8.2
SE	2.40	3.40	3.83	2.25
Unwgtd. N	363	363	363	363
Business credit pattern				
%	1.5	28.2	58.4	11.8
SE	0.74	3.25	3.54	2.39
Unwgtd. N	315	315	315	315
Education credit pattern				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	3	3	3	3
Fine arts credit pattern				
%	3.0	44.3	32.7	20.0
SE	2.93	10.26	8.87	6.99
Unwgtd. N	50	50	50	50
Humanities credit pattern				
%	3.6	28.4	54.4	13.6
SE	1.66	4.08	5.08	3.37
Unwgtd. N	182	182	182	182
Social sciences credit pattern				
%	13.9	35.8	39.5	10.8
SE	4.23	6.16	6.10	4.48
Unwgtd. N	103	103	103	103

Data for Figure 3.4
Percentage of students attending less-than-4-year institutions with specified high school science pattern, by postsecondary course pattern (cont.)

	High school science pattern			
	Concentrator	Moderate concentrator	General	Limited/ non-participant
Non-technical occupational credit pattern				
%	2.4	24.1	52.8	20.7
SE	1.17	4.17	4.76	4.05
Unwgtd. N	194	194	194	194
Technical occupational credit pattern				
%	13.3	73.4	11.9	1.43
SE	3.91	5.50	4.11	0.83
Unwgtd. N	85	85	85	85

Data for Figure 3.5
Percentage of students in 4-year institutions with specified high school humanities pattern, by postsecondary course pattern

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Total			
%	44.2	29.9	25.9
SE	1.56	1.26	1.27
Unwgtd. N	3152	3152	3152
Engineering credit pattern			
%	33.4	36.5	30.1
SE	5.43	5.57	5.51
Unwgtd. N	125	125	125
Health sciences credit pattern			
%	39.7	32.7	27.6
SE	6.67	6.65	6.02
Unwgtd. N	87	87	87
Natural sciences credit pattern			
%	34.9	34.8	30.4
SE	2.22	2.19	2.14
Unwgtd. N	887	887	887
Business credit pattern			
%	42.7	26.2	31.1
SE	3.09	2.75	2.88
Unwgtd. N	454	454	454
Education credit pattern			
%	44.5	33.1	22.3
SE	7.13	6.43	5.79
Unwgtd. N	78	78	78
Fine arts credit pattern			
%	32.7	41.1	26.3
SE	5.42	6.28	5.2
Unwgtd. N	116	116	116
Humanities credit pattern			
%	55.3	24.3	20.4
SE	2.76	2.47	2.12
Unwgtd. N	683	683	683
Social sciences credit pattern			
%	57.8	23.9	18.4
SE	2.88	2.29	2.19
Unwgtd. N	618	618	618

Data for Figure 3.6
Percentage of students in less-than-4-year institutions with specified high school humanities pattern, by postsecondary course pattern

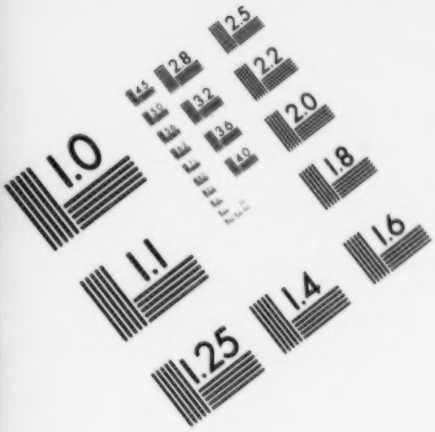
	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Total			
%	28.3	30.4	41.3
SE	1.65	1.57	1.83
Unwgtd. N	1472	1472	1472
Engineering credit pattern			
%	29.1	32.6	38.3
SE	5.15	5.75	6.32
Unwgtd. N	100	100	100
Health sciences credit pattern			
%	44.7	27.3	28.0
SE	8.14	8.13	6.87
Unwgtd. N	68	68	68
Natural sciences credit pattern			
%	25.7	34.5	39.8
SE	2.88	3.27	3.45
Unwgtd. N	373	373	373
Business credit pattern			
%	26.5	32.1	41.4
SE	2.99	3.37	3.67
Unwgtd. N	324	324	324
Education credit pattern			
%	low n	low n	low n
SE	low n	low n	low n
Unwgtd. N	3	3	3
Fine arts credit pattern			
%	27.2	41.6	31.2
SE	8.41	10.17	8.73
Unwgtd. N	50	50	50
Humanities credit pattern			
%	37.7	21.4	40.9
SE	4.95	3.63	5.30
Unwgtd. N	189	189	189

Data for Figure 3.6
Percentage of students in less-than-4-year institutions with specified high school humanities pattern, by postsecondary course pattern (cont.)

	High school humanities pattern		
	Concentrator	Moderate concentrator	Limited concentrator
Social sciences credit pattern			
%	40.8	30.2	29.0
SE	6.16	5.77	6.01
Unwgtd. N	105	105	105
Non-technical occupational credit pattern			
%	22.4	26.4	51.2
SE	3.77	3.88	4.43
Unwgtd. N	205	205	205
Technical occupational credit pattern			
%	14.4	28.3	57.2
SE	4.00	5.51	6.67
Unwgtd. N	90	90	90

Data for Figure 3.7
Percentage of students attending 4-year institutions with specified high school vocational pattern, by postsecondary course pattern

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Total				
%	10.6	14.2	66.2	8.9
SE	0.83	0.88	1.36	1.03
Unwgtd. N	3136	3136	3136	3136
Engineering credit pattern				
%	10.0	15.7	66.6	7.6
SE	3.75	4.31	5.64	2.99
Unwgtd. N	124	124	124	124
Health sciences credit pattern				
%	18.8	7.9	67.5	5.9
SE	5.19	3.4	6.15	3.1
Unwgtd. N	87	87	87	87
Natural sciences credit pattern				
%	7.1	15.3	68.7	8.9
SE	1.11	1.64	2.15	1.36
Unwgtd. N	882	882	882	882
Business credit pattern				
%	20.8	17.1	55.1	6.9
SE	2.64	2.35	3.19	1.9
Unwgtd. N	453	453	453	453
Education credit pattern				
%	6.0	18.9	74.5	0.6
SE	3.36	5.64	6.15	0.56
Unwgtd. N	78	78	78	78
Fine arts credit pattern				
%	0.5	7.9	82.3	9.3
SE	0.41	3.56	4.77	3.54
Unwgtd. N	114	114	114	114
Humanities credit pattern				
%	9.0	11.8	67.1	12.0
SE	1.43	1.66	2.7	2.21
Unwgtd. N	680	680	680	680
Social sciences credit pattern				
%	6.7	13.0	69.2	11.1
SE	1.38	1.88	2.84	2.27
Unwgtd. N	616	616	616	616



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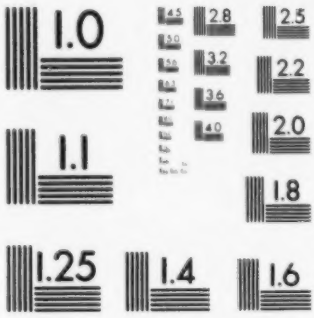

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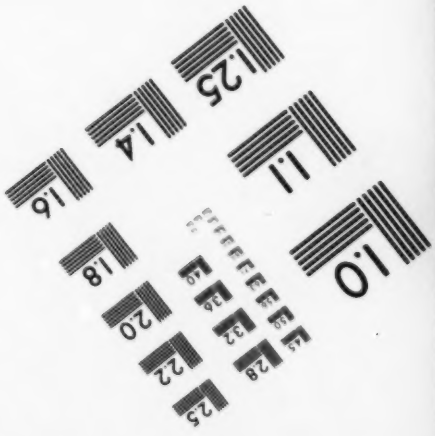

Data for Figure 3.8
Percentage of students attending less-than-4-year institutions with specified high school vocational pattern, by postsecondary course pattern

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Total				
%	25.6	27.5	43.9	2.9
SE	1.72	1.65	1.91	0.59
Unwgtd. N	1422	1422	1422	1422
Engineering credit pattern				
%	25.8	25.5	43.4	5.3
SE	5.97	5.1	6.24	2.85
Unwgtd. N	96	96	96	96
Health sciences credit pattern				
%	21.2	24.1	54.7	0.0
SE	6.01	8.18	9.02	0.0
Unwgtd. N	64	64	64	64
Natural sciences credit pattern				
%	19.1	29.7	48.4	2.8
SE	3.14	3.77	3.71	1.05
Unwgtd. N	363	363	363	363
Business credit pattern				
%	39.8	24.9	34.2	1.1
SE	3.72	2.92	3.33	0.66
Unwgtd. N	315	315	315	315
Education credit pattern				
%	low n	low n	low n	low n
SE	low n	low n	low n	low n
Unwgtd. N	3	3	3	3
Fine arts credit pattern				
%	4.1	18.3	66.9	10.7
SE	2.08	6.72	8.5	5.45
Unwgtd. N	50	50	50	50
Humanities credit pattern				
%	17.4	27.1	51.2	4.3
SE	3.69	4.94	5.18	1.94
Unwgtd. N	182	182	182	182

Data for Figure 3.8
Percentage of students attending less-than-4-year institutions with specified high school vocational pattern, by postsecondary course pattern (cont.)

	High school vocational pattern			
	Concentrator	Limited concentrator	Sampler	Non-participant
Social sciences credit pattern				
%	12.4	27.6	56.6	3.4
SE	4.05	6.0	6.55	2.09
Unwgtd. N	103	103	103	103
Non-technical occupational credit pattern				
%	22.8	35.6	38.9	2.7
SE	3.93	4.46	4.52	1.45
Unwgtd. N	194	194	194	194
Technical occupational credit pattern				
%	47.8	27.9	20.6	3.7
SE	7.26	5.94	5.31	3.56
Unwgtd. N	85	85	85	85

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